SOUTHWEST SECTOR DEVELOPMENT AT HARVARD SQUARE

by

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DAVID KUANG-YU FANG

ABSTRACT

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Submitted to the Department of Architecture on May 12, 1977, in partial fulfillment of the requirements for the degree of Master of Architecture in Advanced Studies.

The Southwest Sector development area has been for the past ten years what might be best described as an urban battleground. The Holiday Inn, the JFK Memorial Library and Museum were proposed to be built there once. Since then the City of Cambridge has not been able to put together a comprehensive development plan for the site.

In this study, a plan is proposed for the future development of the 17 acre site at Harvard Square. The work of this study is divided into four main sections:
Research The main emphasis of this research is an investigation of the urban forms, urban context of Harvard Square, and the potential of the Southwest Sector in terms of social, economic, and political significance. It is an attempt to develop a feasible program for the Southwest Sector development at Harvard Square.
Site Analysis This is to emphasize the physical characteristics of the site and the surrounding environment by using drawings to indicate important aspects of the orientation, views, exposures, circulation, and urban fabrics in relation to a pedestrian scale.
Program The program is meant to be a synthesis of the research, reflecting the viability of each use in terms of past and present trends and the forecast opportunities of the Southwest Sector development. Also, the program suggests basic square footage allocations for each use.
Physical Design One physical design has been developed to exemplify the findings of the research and the guidelines of the program. It includes the proposed land use, ground floor circulation, below-grade parking, and basic residential design for the Southwest Sector development at Harvard Square.

Thesis Supervisor:

Eduardo F. Catalano
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Members at Monacelli Associates, Gladstone Associates.

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INTRODUCTION

I. Background

What is the role of the physical environment in creating the character of Harvard Square?

What are the physical consequences of trying to deal with high levels of traffic congestion, inadequate parking and pedestrian inconveniences?

Given the magnitude and number of these issues and the nature of the existing structure, can future growth and change be guided to insure that an unique district is enhanced rather than destroyed?

Through urban design investigations and surveys, Harvard Square has an identifiable urban structure. Although this structure does not produce the character of the Square, it does provide the setting in which street-life, interactions of people, and an infinite variety of activities can flourish. Idenfification and understanding of those aspects of the urban structure which are essential in producing this setting is imperitive if proper criteria for growth and change are to be established.

As Harvard Square has grown from a neighborhood center to a city center, the nature of its stree-life has been altered. The intense street-life of today is increasingly attractive because it provides for human interactions and physical contacts on a pedestrian scale. However, a paradox now exists: as the Square becomes more attractive to those

beyond its immediate environs and as attempts are made to accomodate new and larger scale developments, the essential structure of the Square's physical setting may well be destroyed and with it the very street-life and character which was its attraction. For example, the trend toward highrise buildings and multi-level parking facilities may well be of such a magnitude and form that the pedestrian environment will be overwhelmed. And, as corporate groups replace individual proprietors, the resulting commonplace facilities and merchandisers will dilute the existing distinctiveness of the area. These and similar changes could drastically alter the character of the Square over the next few years.

In order to guide the ongoing development, alternatives to these trends must be identified; investigations must be undertaken to determine ways of regulating these pressures, and new forms must be developed to be compatible with the existing structure, yet fulfill the criteria imposed by contemporary forces. As the basis for these investigations, several issues have been identified on the following pages along with proposed strategies for their resolution.

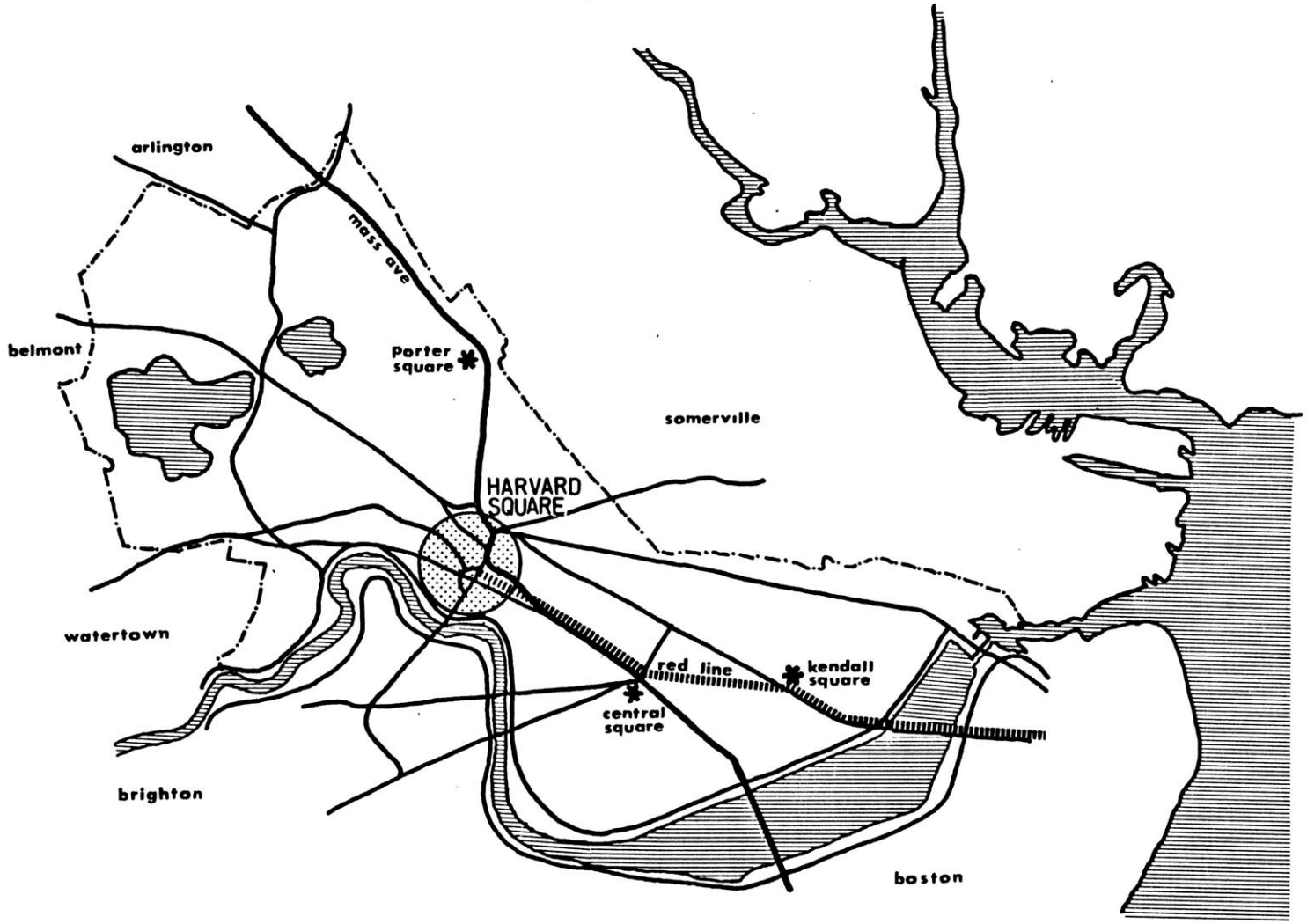
II. Urban Context

The City of Cambridge has its origins in Harvard Square where the community of Newtowne was founded in the 17$\underline{\text{th}}$ century. As the town expanded, certain land uses tended to concentrate in identifiable sectors - goods and services in the cen-

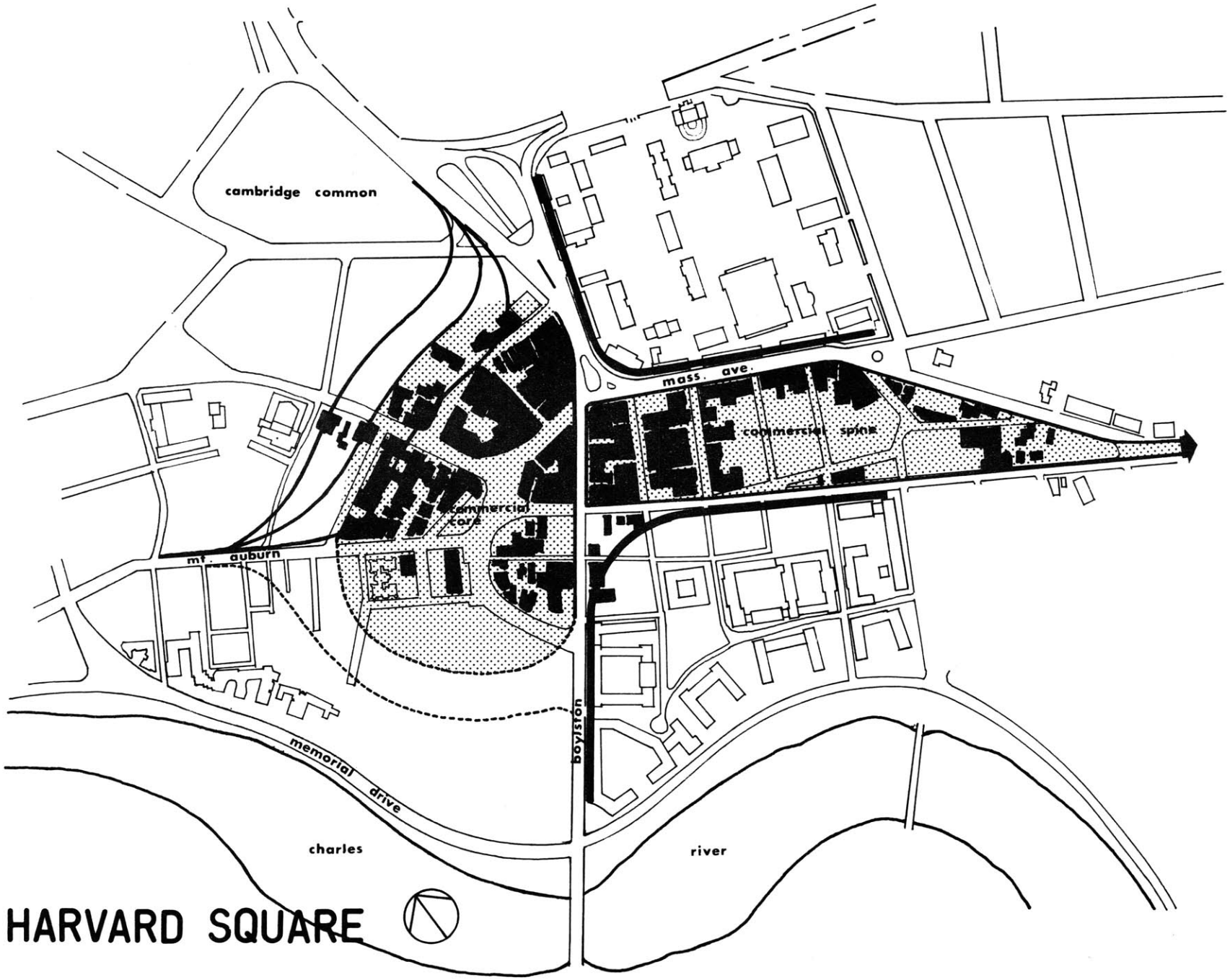
ter, academics (Harvard University, etc.) in the northeast, and residential in the west. The southern sector was left largely undeveloped until a scarcity of land and an increase in land values in the 20th century made its use more attractive. Harvard University built residencies to the east of Boylston Street, the MBTA built its storage yards to the west.

The area in which the MBTA station and Kiosk now stand, at the intersection of Boylston Street and Massachusetts Avenue, became the focal point for the developing City. All major roads radiated out from this intersection, forcing most traffic to and from Cambridge to pass through it. The activity generated by this continuous traffic was vital to the development of the central core of the Harvard Square area. Today, this central core is largely commercial, but in continuity with its past, it has maintained the same focal point and is surrounded by the same but now fully developed residential and academic sectors. Although their uses have greately changed, the neighboring Commons and the Charles River District are now, more than ever, the important natural resources of the area. (Illustrations pp. 8-10.)

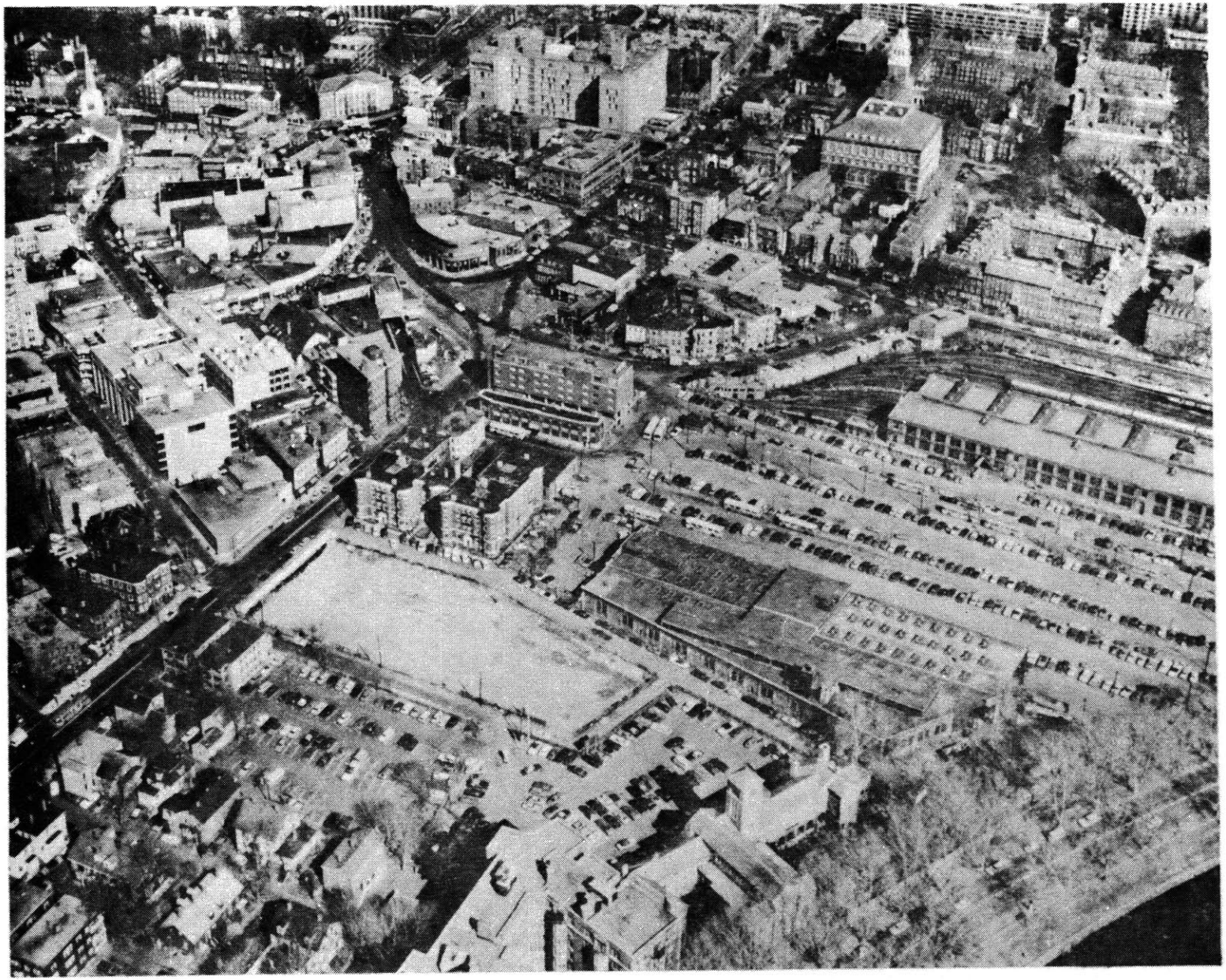
Harvard Square now faces severe pressures for redevelopment, not only in the southwest sector but in the core as well. It is crucial to establish guidelines and controls over future development to insure the compatibility of the old and the new. It is also necessary to formulate a public sector design concept from



HARVARD SQUARE & THE CITY OF CAMBRIDGE



HARVARD SQUARE



which a specific improvements program may be derived.

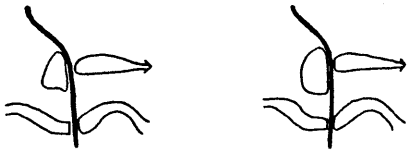
A. Sectors

Harvard Square is composed of four sectors surrounding a commercial core. Three of the four sectors, which have a stable land use, are homogeneous and distinctive in form, and are consequently strong in identity. The fourth sector, to the southwest, is presently underdeveloped. The edges of the northeast and southeast sectors are clear, and accesses to these sectors are limited to specific pedestrian and vehicular entries. The distinction between the core and the northwest sector is not as clear because the change in building form is less abrupt and pedestrian passages to the sector are multiple.

The existing sectors should be reinforced and the Southwest Sector should be developed in such a way as to contain rather than extend the core. This will provide an envelope in which the core can change over time without losing its identity as a cohesive retail district. The abrupt transition between the core and the eastern sectors should be maintained. The change of building form between the core, the northwest and the southwest sectors may be less abrupt; however, commercial land use should not extend beyond Story Street above Mt. Auburn Street and only limited expansion

should be allowed south toward the River.

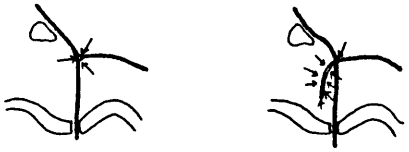
B. Retail Area



The present size and shape of the retail core is critical to its character. A person can walk through and experience the entire area in a short period of time; he can be exposed to all of its activities, and to the surrounding land use and building forms as well. As a result, the area can be easily understood. This ease of comprehension reinforces the sense that the core has a unique identity.

Commercial development in the Southwest Sector should be contiguous with the existing retail core. Ground coverage should be comprehended with increasing density as a unified and identifiable whole.

C. Focus



The commercial core has a single focus at the location of the Kiosk and MBTA entrance. This focus is reinforced by present vehicular and pedestrian movement patterns, commercial frontage and building forms. A focus is essential as a means of orientation and as a place in which activity can be concentrated.

With the development of the Southwest Sector, there could evolve a new focus which would compete with the present focus. This duality could dilute the in-

tensity of activity and reduce the clarity of orientation. There is a need, therefore, to change the form of the existing focus from a point around which all activity evolves, to a line which is reinforced by multiple activities and which connects the Southwest Sector to the whole.

D. Charles River and the Common

To the north and south of the core are two important natural resources - the Cambridge Common and the Charles River. At present, these resources are not being connected or related to the core in any significant way.

These areas should be linked to the core by pedestrian ways, landscape treatments and building developments so that their uses may become extensions of the core activity rather than isolated events.

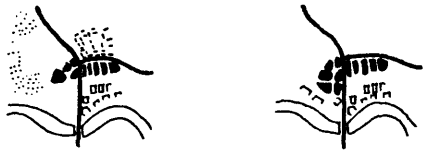
III. Elements of Physical Form

The physcial form of Harvard Square is the product of incremental growth and unplanned development. The resulting juxtaposition of small-scale buildings of different historical periods and styles of architecture produces a varigated building fabric.

Today, redevelopment is more likely to occur on a larger scale than in the past. Because of economic factors, redevelopment may produce buildings of a bulk and height which are potentially incompatible with the existing structures.

To insure that the physical characteristics of Harvard Square are enhanced, a number of efforts are required.

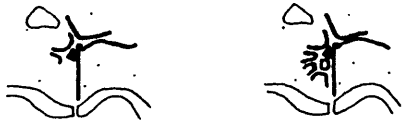
A. Building Density



In the core, all buildings are contiguous. They cover nearly the entire lot and leave only the streets as open spaces. The sectors, on the other hand, are composed of separate buildings. Because the form of the buildings differs from sector to sector, the resultant open spaces are varied and distinctive in shape from open spaces in the core.

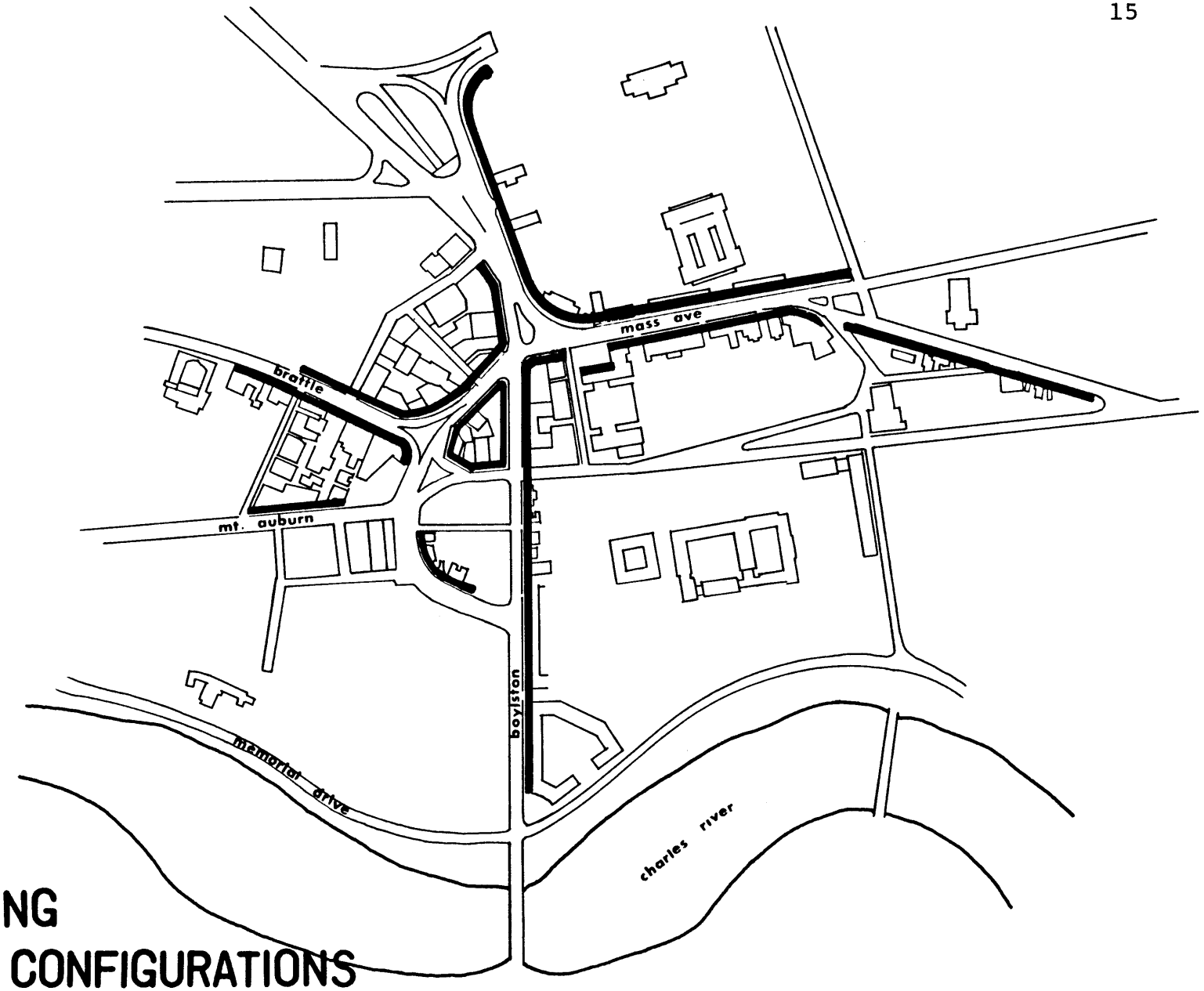
Redevelopment of the core and alterations to the surrounding sectors should maintain the existing building ground coverage and open space configurations.

B. Walls and Objects



Within the commercial core, contiguous buildings create extended walls which range in height from two to six stories and in length up to 1,000 feet. The walls provide the visual continuity within the core, the spires and cupolas serve as reference points from the core. These reference points help to visually define the limits of the core area.

Economic pressures inherent in new development will tend to favor high-rise construction which will break the continuity of the wall-and-object relationship. Existing wall configurations



EXISTING WALL CONFIGURATIONS

should be extended and more fully developed at the pedestrian scale, and a zone of maximum height of 60 - 80 feet should be maintained. Economics of development can be achieved and the full floor-area ratio can be met while adhering to these criteria.

C. Squares and Channels

Within the core, the extended walls create two distinct spatial conditions. Where the walls are parallel, the street space is defined as a channel. These channels, in turn, lead to triangular open spaces which are formed by a series of curved walls. The pattern of vehicular movement through these triangular spaces, commonly referred to as Squares, leaves islands of unusable land.

The dimensional characteristics of both the open spaces and channels should be maintained and extended into the Southwest Sector. Vehicular movement should be reordered so that the spaces may be converted to predominantly pedestrian use.

D. Tunnels and Niches

Occasionally in Harvard Square, walls, awnings, streetscape and sidewalk conditions work together to produce physical enclosures of the pedestrian walks which can be characterized as tunnels. Where this occurs, pedestrian activity is enhanced. A more literal form of pedestrian tunnels is the through-block passageways at Holyoke Center and 44 Brattle Street. Niches such as doorways, shop windows, parks and street cafes occur along the tunnels at random. Streetscape

elements such as lights, signs, benches, parking meters and trash cans, although in somewhat chaotic order, are found continuously along the edge of the tunnel. Canopies such as trees, awnings, overhead signs and marquees occur intermittently and reduce the scale of the sidewalk enclosures. Unfortunately, at present the elements necessary to form the tunnel and encourage pedestrian activity are not orderly or properly designed to capitalize on the potential assets of this concept.

IV. Movement and Activity

Bright storefronts, flashing lights, sidewalks crowded with people, peddlars, street musicians, moving cars, singly and doubly-parked cars and delivery trucks are all familiar components of Harvard Square movement. These different forms of activity and movement work together to create the dynamic quality of the core area, but at the same time produce conflicts and congestions.

Intensive vehicular movements passing through and circling within the core is the principle cause of conflict. Restructuring vehicular movements could increase pedestrian safety and reduce congestions, but at the same time could diminish the intensity and dynamic quality. If vehicles and pedestrians are to be separated in this restructuring, it is very important that the resulting vehicle-free areas be redesigned to encourage an increase in activities and to foster pedestrian interaction so that the dynamic aspect of the Square is

strengthened rather than diminished. The design should go beyond the insertion of a few trees and benches, and investigate the potential which might result from the reconfiguration of building forms, as well as the reorganization of development parcels.

If the environment in and around Harvard Square is to be maintained and protected, traditional attitudes toward parking and transportation must be changed. Harvard Square can no longer accomodate all those who wish to drive to the Square and park in or around it. A comprehensive system of vehicular movement, parking and services must be developed in concert with an improved and expanded public transportation system.

A. Pedestrians

Pedestrian movement in Harvard Square parallels the principal and secondary roadways and occurs on through block passages. The nature of use along a particular pedestrian way is a function of its proximity to the focus of the core, the type of commercial frontage and the number of access points, the width of walkways, and the density of developments above the commercial level.

With the development of the Southwest Sector, a primary pedestrian network should be created to connect that sector with the focus of the core. New and existing pedestrian ways should be connected to form a closed circuit. Through block movement should be developed as a

more important part of the total pedestrian network.

B. Vehicular Traffic

At present, traffic moving through the Square to points beyond and traffic with Harvard Square destinations flow together in patterns which circle virtually all blocks within the core. This pattern creates congestion, confusion, and conflicts in the heart of the core. On-street parking increases traffic interruption and inadequate parking accomodations cause repeated movements within the core.

The two vehicular movement patterns should be separated. Through movement should be channeled clearly and directly, with minimum turning options. Short-term parking facilities should be located in the sectors or adjacent to them, and local traffic destined for Harvard Square should diverted to these accomodations.

C. Parking

Most public parking in Harvard Square is on-street curb parking, This system is inefficient, disruptive, and environmentally harmful. The land taken up for parking in this way should be more appropriately used.

Short-term parking should be accomodated by a system of multiple-use garages which are located within walking distance of the core. Vehicular access to the garages should be from peripheral roadways and not from roads passing through the Square. Long-term parking should be located outside the core and should be

connected to it by pedestrian ways.

D. Services

In many places, the delivery of goods to the commercial core contributes to vehicular congestion and conflicts with pedestrian activities. There is inadequate space for parking and unloading, and a lack of order as to where and when the deliveries are made.

In the Southwest Sector, a system of service roads and adequate loading docks should be developed. Where off-street facilities cannot be provided in the core, time and frequencies of deliveries should be regulated by a management system.

GUIDELINE FOR THE DEVELOPMENT OF THE SOUTHWEST SECTOR

The purpose of this section is to outline a set of criteria relevant to the future development of a large tract of land in Harvard Square identified as the Southwest Sector. All these criteria have been derived from numerous studies, evaluations of proposals, and community responses in consultation with the Harvard Square Development Task Force, Harvard University, The Community Development Department of the City of Cambridge, and the Monacelli Associates.

I. Background

A. Boundaries

The Southwest Sector of Harvard Square is the area of land bounded by Mt. Auburn Street to the north, Boylston Street to

the east, Memorial Drive to the south, and a western border running north-south roughly in the alignment of Gerry Street. In this area, on the site of the existing MBTA yards, the JFK Memorial Library was once to be built.

B. Parcel Ownership

The total site area is approximately 17 acres. Three quarters of the area is presently owned by the Massachusetts Bay transportation Authority (MBTA), and is subject to the control of the General Services Administration. Parcels comprising the western edge of the site were assembled by four owners: Harvard Trust, Dupree Associates, Inc., Trinity Realty Trust and Kanavos Enterprises (FMI). Now Trinity Realty Trust has development control of the Harvard Trust site and the FMI site. Fronting along Mt. Auburn Street are the Craigie Apartments owned by Harvard University, the Cronin Restaurant, and the Harvard Motor Hotel.

C. Site Conditions

1. Topography

The site is relatively flat, sloping from a height of + 27.5 feet on Mt. Auburn Street to a low of + 19.6 feet on Memorial Drive. An existing concrete slab at the train yard is at an elevation of + 12.0 feet and requires sump pumps, the water table being generally at an elevation of + 13.0 feet.

2. Soil Conditions

The site is underlain by a series of subsoils typical of the Boston Basin and of Cambridge along the Charles River. These include fill over marsh deposits

underlain by sandy beach materials,which in turn overlay a substantial thickness of Boston Blue Clay. The clay is underlain by a relatively thin layer of glacial fill overlying shale or slate bedrock. In general, the layer of marsh deposits starts at Bennett Street and increases in thickness towards Memorial Drive. The bedrock floor slopes steeply across the site from an approximate elevation of 60 feet beneath the intersection of Boylston and Eliot Streets to an elevation of 120 feet at Memorial Drive and University Road. (Resources: HUGH STUBBINS AND ASSOCIATES, INC., and MBTA.)

3. Utilities

A 24" relief connection is planned as part of the MDC Charles River Relief System. A new 24" water main has been installed by the City of Cambridge under Eliot Street and can serve as the major feeder for any future developments.

4. Zoning

The site falls under three zoning districts as indicated on the next page:

O Office District - west of University Road. Permits business and professional offices and multi-family dwellings. FAR is 3.0 .

BB Business B District - north of Bennett Street between Eliot Street and University Road. For general business. FAR is 4.0 .

C-3 Residence C-3 District - area bounded by Bennett, Eliot and Boylston Streets, Memorial Drive and University Road. Designated for multi-

family dwellings. FAR is 3.0 .

A proposal for a "Harvard Square Overlay District" that would unify the zoning of the entire area was not enacted by the City Council.

Present height limitations, floor area ratios, and allowable densities exceed those recommended by the Harvard Square Comprehensive Policy Plan.

5. Existing Buildings

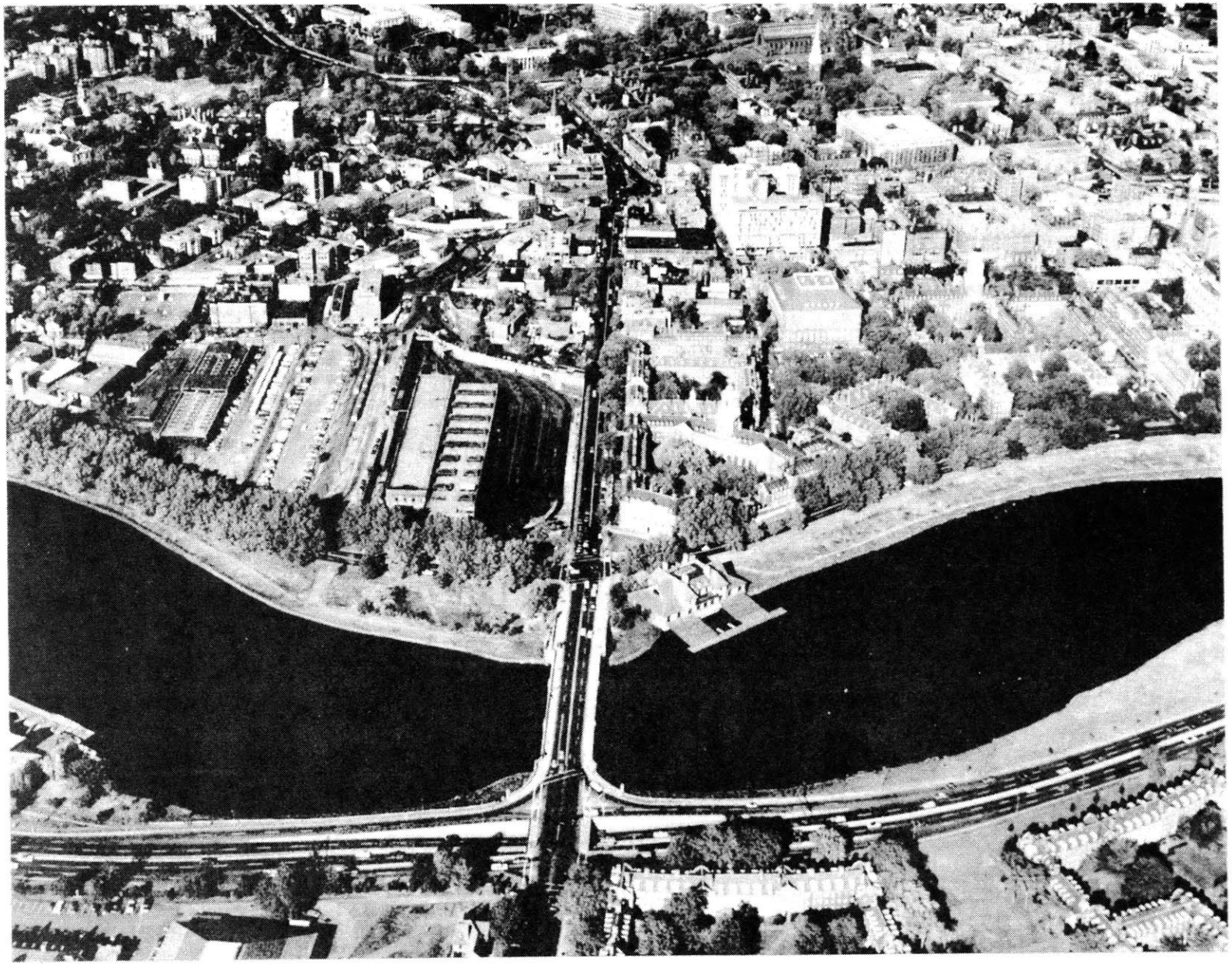
There is no building on the site of historic value or exceptional aesthetic merit requiring mandatory preservation. However, for reasons of economics the Craigie Apartments and the Harvard Motor Hotel have been kept and renovated in this study. All other buildings and structures would be removed. (Illustrations pp. 25-30.)

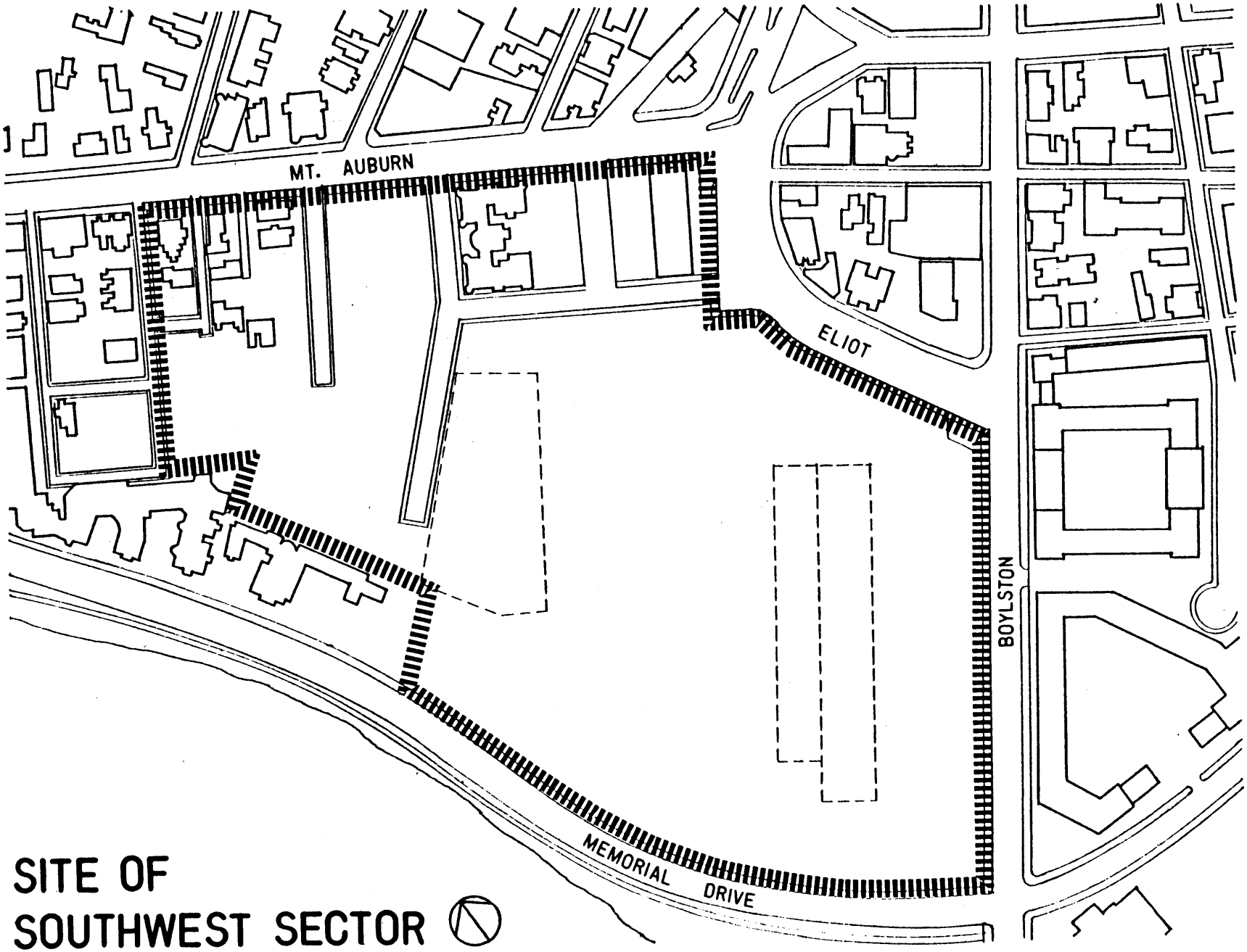
II. Development Objectives

According to the Harvard Square Comprehensive Policy Plan, the development pattern of the Southwest Sector should be a mixed-use development which seeks to do the following things: establish a scale and character of development which provide an identity for the Southwest Sector while remaining consistent with the general character of the Harvard Square area, serve as the principal resource for the growth of the commercial core, and respect its neighbors - the Charles River, the Harvard Houses Area, and the residential pattern of "Neighborhood Ten".

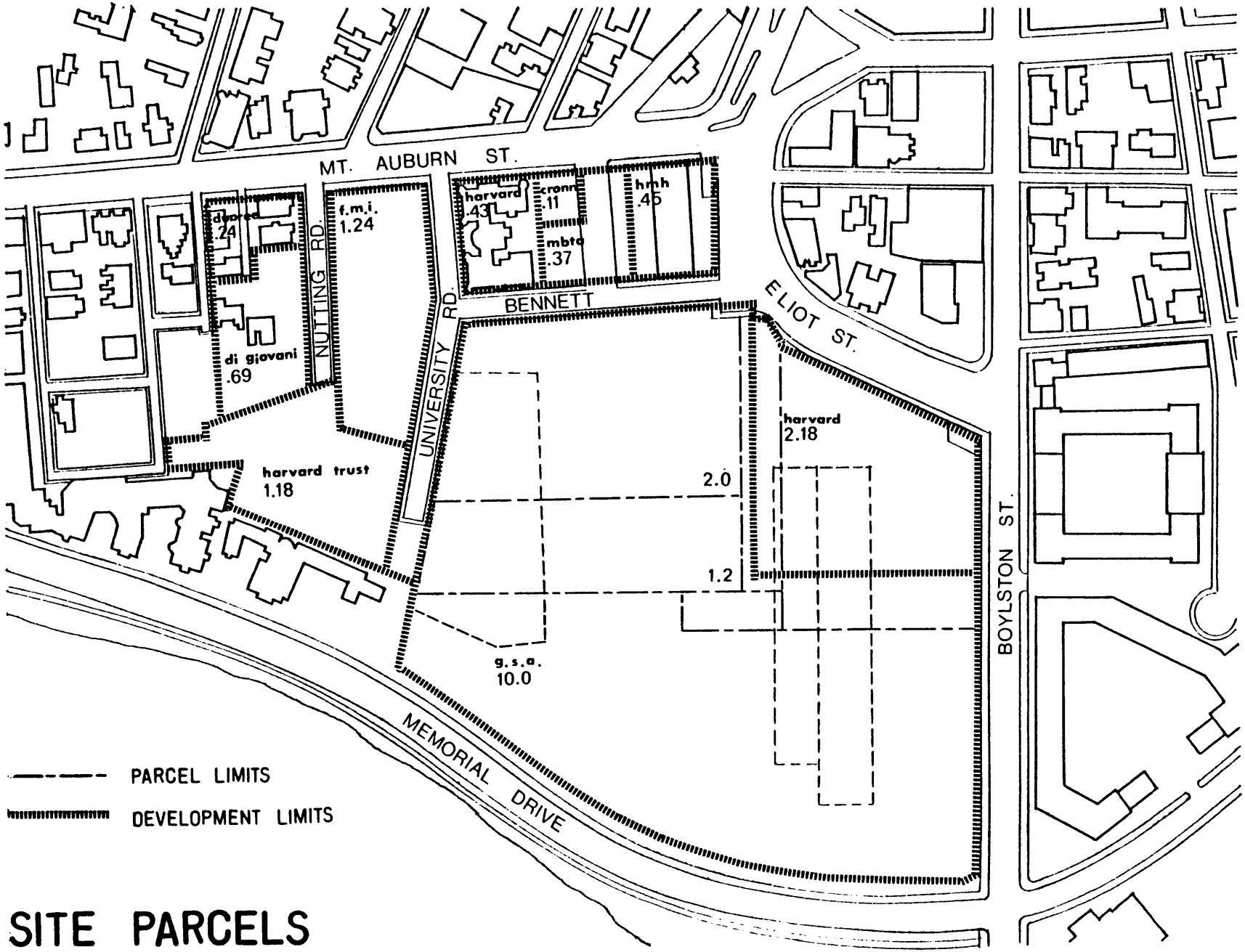
A. Relation to Traffic and Service Systems: Circulation Objectives

The Southwest Sector of Harvard Square

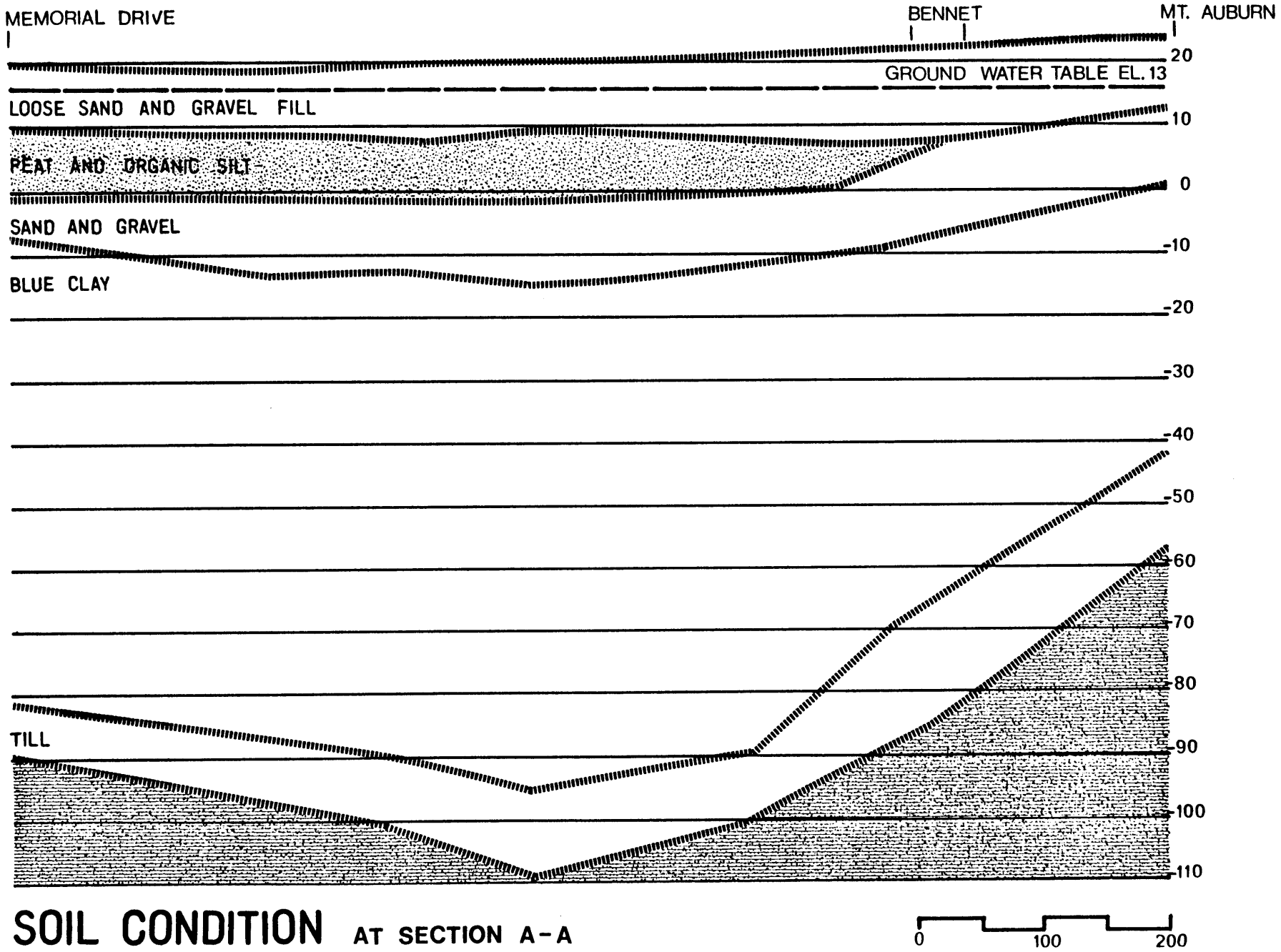




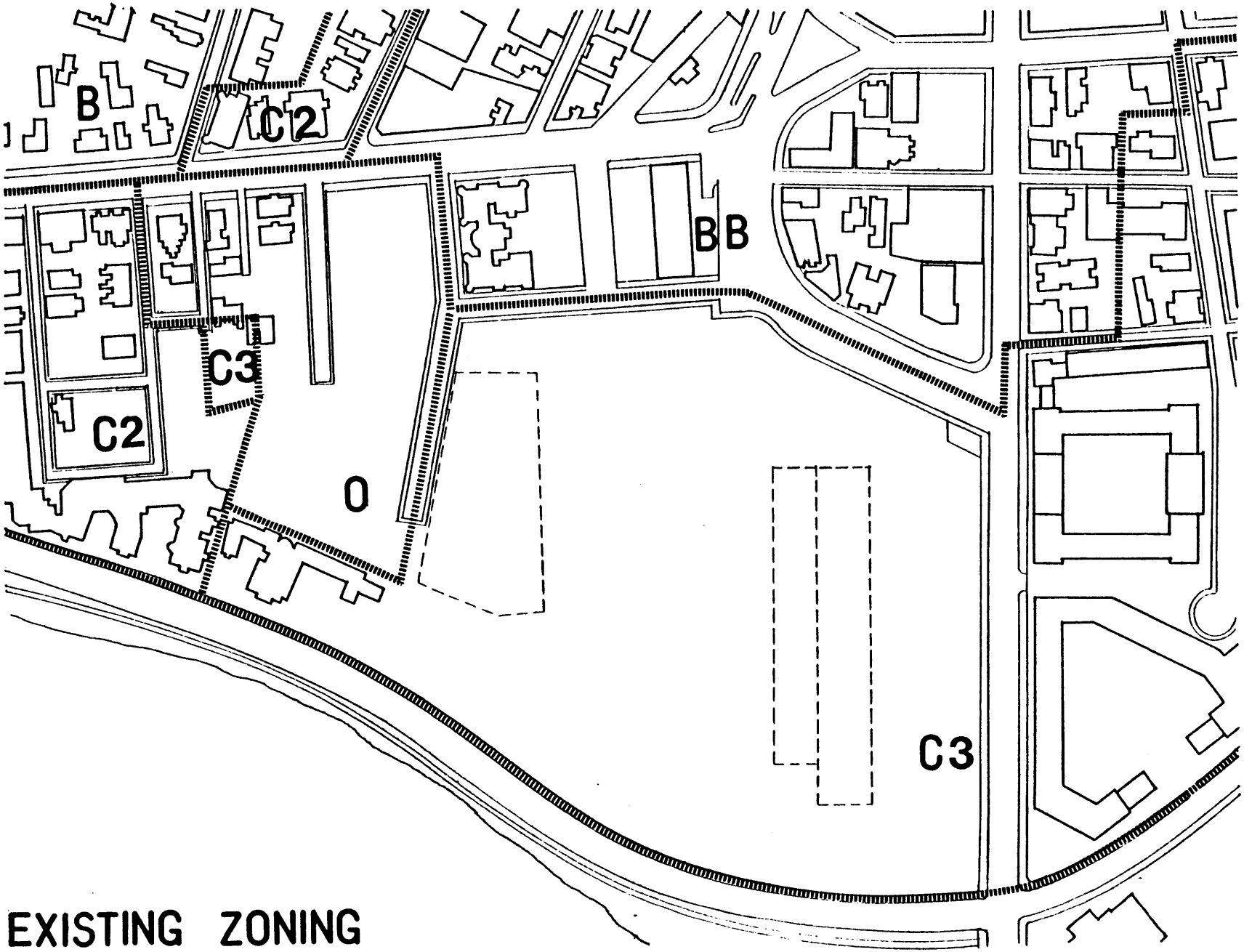
SITE OF
SOUTHWEST SECTOR



SITE PARCELS



SOIL CONDITION AT SECTION A-A



EXISTING ZONING

is surrounded by a mix of uses: small-scale residential to the west, retail and commercial to the north, institutions to the east, and the river front to the south.

Vehicular assesses, roadway alignments, and capacities are of major concern in the Southwest area. The principal objective is to establish a separate and independent roadway and service system within the Southwest area that will not conflict with the peripheral traffic flow, the pedestrian movement within the site, or the pedestrian linkages to adjacent areas. Interfaces should be limited to those performing a needed function, i.e., taxi access to pedestrian areas, auto drop-offs, etc.

B. Surrounding Roadways and Access Locations

Three principal roads surround the Southwest area: Mt. Auburn to the north, Boyleston Street to the west, and Memorial Drive to the south. The present vehicular movement pattern is shown on the next page.

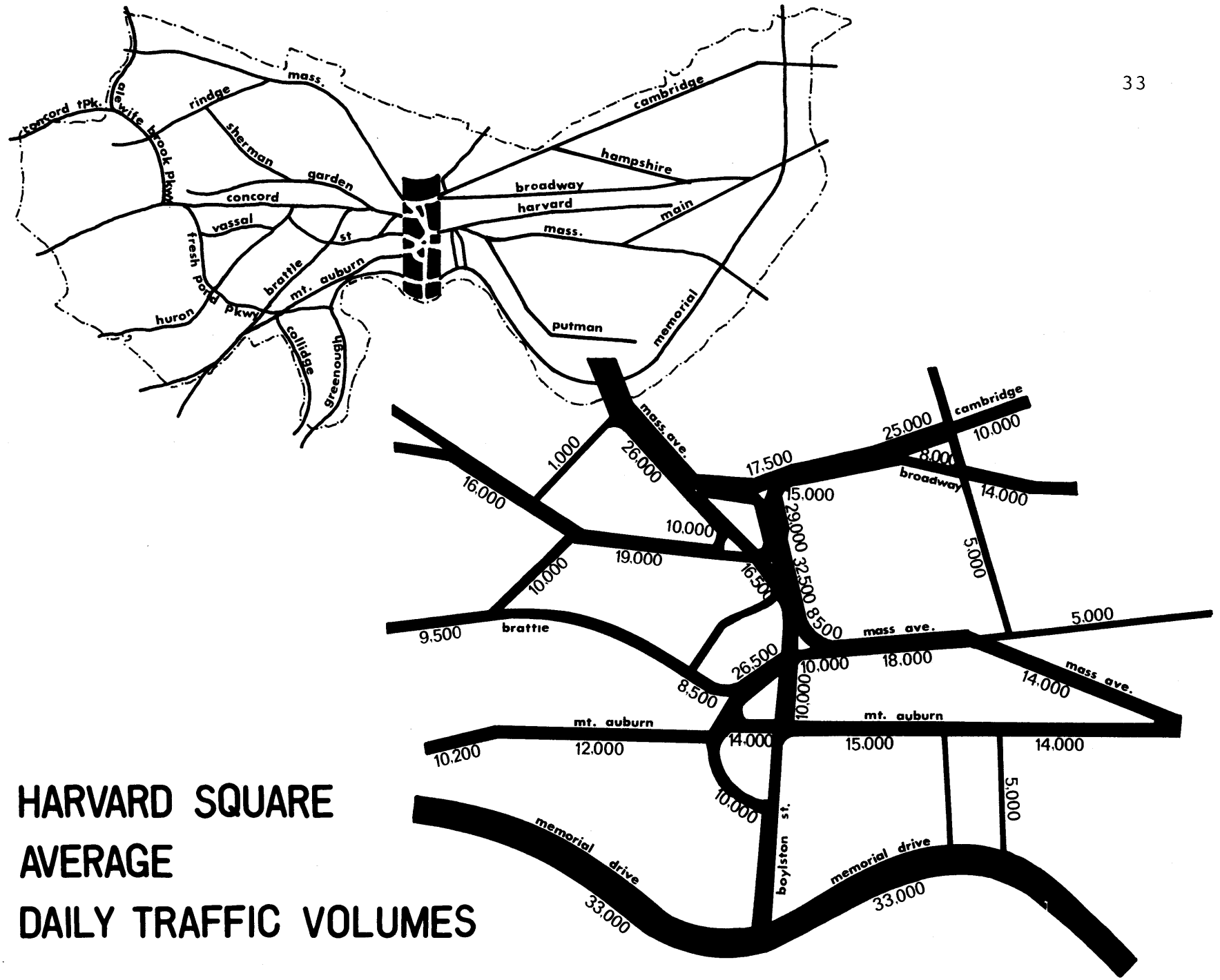
The Harvard Square traffic problems, such as through traffic, students, MBTA subway patrons, etc., are less significant than fundamental structural problems. Both the historic street development pattern and the current street network make the Harvard Square area the crossroads of Cambridge, as most major streets in the City lead to or through Harvard Square.

The pattern of thirteen radiating

streets may permit the motorist to get to Harvard Square with ease; however, it is very difficult to get through Harvard Square. Nearly 42 percent of all automobile trips made to Harvard Square are made by persons going to work and an additional 11 percent of the trips are made to attend school. About 55 percent of the trips to Harvard Square are ones which require either all-day or long-term parking. Significantly less than 10 percent of the trips within Cambridge are made by public transportation. (Resources: Transportation Planning Office, Traffic Department, Cambridge,and Monacelli Associates.) (Illustration p. 33.)

The following are some strong considerations which will influence the choices of road alignment:

- Deviations of the road alignment from the existing rights-of-way will require the taking of private properties at substantial costs and legal negotiations.
- Below-grade alignment almost requires that the above-grade future development be known so that adequate structural designs can be made to accomodate the loads.
- A below-grade roadway would require an agreed upon, overall plan for parking below-grade, and development above grade, so that access could be provided for both entries and exits.
- A roadway at grade and the required loading and service areas would consume a significant amount of land more appropriately used for pedestrian cir-



HARVARD SQUARE
AVERAGE
DAILY TRAFFIC VOLUMES

culation. In addition, it will be difficult to avoid vehicle-pedestrian service conflicts.

III. Pedestrian Circulation

The Harvard Square Comprehensive Policy Plan outlines three major objectives for pedestrian circulation in the Southwest Sector:

- Clear pedestrian linkages should be made to the surrounding areas, and a principal pedestrian access should be developed to Brattle Square through the Eliot Street area.
- Pedestrian and vehicle circulation should be separated if possible.
- The area should focus on an open space adaptable to a variety of outdoor activities.

Detailed designs of the internal pedestrian system will result from the ultimate uses and from the physical design criteria. If vehicle-free areas are to be developed, it is important to provide the proper type and amount of uses along them so that an appropriate level of dynamic activity will take place. Each pedestrian area may well have a programmed goal: to be a lively way for shopping, to be a gathering place for events, or to be restful, with landscaped areas and a more residential atmosphere. In any case, the paramount goal is to develop an inter-connected system of pedestrian paths.

IV. Parking

The Southwest Sector is the only location where parking can be built without

demolishing an existing active use.

At present there are about 800 parking spaces in the Southwest area. The program suggested by the Task Force analysis allows for ultimately 700-900 public spaces to be built to replace private spaces vulnerable to new development and additional parking to meet the needs new development generates.

The City would like to achieve a significant number of municipal public spaces in the course of developing the Southwest area.

From the studies which have been made, it appears that parking underground, while expensive, could work if

- The quantity were large enough, and/ or
- It did not extend below the water table.

The feasibility analysis conducted by The Community Development Department and their consultants, Cambridge Seven Associates, indicates that it may be feasible from both physical and financial standpoints to put parking below grade. The HUGH STUBBINS AND ASSOCIATES' study also indicates that below-grade parking appears possible.

The City is the only body in the appropriate financial position to build parking, especially by using the joint venture parking concept such as the one proposed for Nutting Road but larger in area. It must be kept in mind that the City does not own any land in this area and it may not be feasible to buy the land at market value, build parking

structures and lease spaces at a realistic rate. Trinity Realty Trust has made just such a proposal and believes it would work and that they would do it if they did not have to compete with adjacent on-grade parking lots.

Through Monacelli's and STUBBINS' researches, the City has three basic options:

A. Do Nothing.

Just let the on-grade lots exist until the parcel is developed and requires that parking be accomodated for the development only as called for in the Zoning Code. This option would ultimately deplete the only large public parking resource which exists. It may prove financially feasible to some developer to get into the parking business, since the demand seems to be there if the price is right, but this is a high-risk option. If the private developers do not opt to build public spaces, the City would have lost the opportunity for many years to come. Therefore, this option, "Do Nothing", is not recommended.

B. Continue Pursuit of Joint Venture.

The continue pursuit of joint development concept will take time, committed staff, and financial resources to resolve the deals. Afterwards, it would take funds to build the facilities. However, given the past record of achievement, this option seems to present little hope unless a true commitment is made.

C. Take Property for the Public Purposes and Build Parking.

The City may do this if it can show the real public need. The fact is that the need exists and that the City should seriously consider this option. Now is the time when property in the Southwest Sector can be taken with minimum negative impact or creation of personal hardship.

Under this option, a garage below-grade could be built with ground floor retail or community service accomodations. It could be located in such a way as to present the minimum visual disturbance and yet be close to the commercial area. At present, the implicit parking policy of the City, through its Zoning Code and Parking Fund program, is that the City provides parking for the commerical districts. A reliance on the private sector to build parking would mean a change of policy. If that were done, the Zoning Code should be altered and a mechanism to insure adequate quantity and location of parking in the future should be prepared.

Therefore, option C by itself is very possible and is the one most amenable to positive action. And the most important thing is that this could be the catalyst to create development.

V. Urban Design Criteria

A. Height, Scale, Bulk, Density

The Policy Plan has suggested that a height limit of 60 to 80 feet be set on

the Harvard Square commercial area. The range of height was derived from the precedent of major buildings in the area and the general acceptability of the scale which they create. In the Southwest area, special consideration must be given to the related elements of form,bulk, open spaces, orientation, and transitions, in order to propertly judge the effective height of a project.

There are three locations in the Southwest area where height is of special concern. To the east, along Boylsoton Street, the height limit of development had better not exceed the cornice height established by the Harvard University Houses Area. Indeed, height along that edge had better keep the rhythm and harmony, so as to create a welcome-entrance feeling to the Southwest area along Boylston Street and to the entire Harvard Square area. To the north along Mt. Auburn Street, the developed height had better be established as not over 60 feet. It is the intent to mirror the scale of the Brattle Street block so as to establish a dense but not overpowering edge of Mt. Auburn Street. To the west, abutting the small-scale residential development, a maximum of six stories, preferably less, should be held. If the residential scale of development is maintained at the western edge, heights may be increased in the interior of the Southwest area without ill effects. Along the north edge of the park, a maximum of 80 feet might be acceptable; however, the variety in building

form and the opportunities to capture view and sunshine for the central area of the site should be considered.

Scale, Bulk and Density: these three aspects of building form are interrelated as they may apply to any location in the Southwest area. Analysis of the existing zoning shows that in each of the suggested parcel developments nearly 100 percent of the allowable FAR can be achieved. The development in the Southwest area also needs to indicate that the bulk, density and scale should be such as to respect and harmonize with the abutting development as it now exists. The scale of the Kennedy School of Government and Institute of Politics should be such as to help frame the entrance to Harvard Square from the River. Its height, material, and form had better be institutional in character, yet capture the scale of the traditional Harvard Houses to the east and keep the continuity with the entire Southwest Sector development.

B. Orientation, Sunlight, Views

To the south it should capitalize on the view of the River, the park, and on the southern exposure. Apartment units should have maximum frontage to the south, balconies and yards should be designed as an integral part of the project.

C. Physical Form and Materials

There are two basic principles involved here:

- The design of future projects needs to complete and harmonize with the Square, and

- Consideration of the whole as more important than its individual parts.

Traditional use of brick, concrete, and modular construction is the major objective.

ECONOMIC AND MARKET ANALYSIS

I. Retail Market Indicators

(Resources: Gladstone Associates; The Community Development Department, City of Cambridge; The Harvard Square Task Force; and as indicated in the text.) (See Appendix, pp. 92-108.)

A. Past and Present Trends

Retail sales trends in the Boston Metropolitan Area have shown healthy increases in the major relevant retail categories (i.e., shoppers' goods, convenience goods, and eating and drinking establishments) in both the 1963-1967 and the 1967-1972 periods. On the other hand, comparable retail sales trends for the nine cities and towns in the Harvard Square market area experienced actual

declines - in real dollar terms - for shoppers and convenience goods and had only a modest gain in the eating and drinking category. This reflects the declining retail market share of the older metropolitan core shopping districts over the last ten years as compared to the growing importance of suburban shopping locations with convenient highway assesses.

Retail sales data for the Harvard Square major retail center, as estimated by the Office of Economic Development and Manpower of the City of Cambridge, again bear out the relative stability and modest growth in retail sales in the urban centers. This is especially true between 1967 and 1972 when the annual growth rate for shoppers goods was 1.5 percent, and for convenience goods was minus 2.4 percent - in other words, an actual decline in real dollar sales.

Through the Charles G. Hilgenhurst Associates' study, the estimated 435,000 sq. ft. of retail space in the Harvard Square Market Area was, in turn, subdivided in accordance with the census definition of shoppers goods, convenience goods, and miscellaneous stores. Specifically, approximately 230,000 sq. ft. (close to 53 percent) of the total retail floor space in Harvard Square contained shoppers goods merchandise; about 130,000 sq. ft. (30 percent) of the floor area carried convenience goods; and the remaining 75,000 sq. ft. (or 17 percent) offered miscellaneous goods or services.

Comparing the estimates of floor

area to the 1972 retail sales data, it appears that Harvard Square merchants sell, on the average, approximately $150 of goods/services per square foot of floor space annually. The productivity factors for shoppers goods and convenience goods were approximately $190 and $110 per square foot, respectively. The high sales volumes are not uncommon for desirable CBD locations and, in fact, are necessary to justify high rent levels, taxes, and land costs.

The change in the total number and types of retail establishments in Harvard Square over time is indicative of a qualitative change in the retail "character" of Harvard Square. The number of eating and drinking establishments and "trend-setting" specialty stores increased markedly over the last ten to fifteen years, while the number of larger shoppers goods and convenience goods outlets has remained relatively stable over the same time period; finally, there was an actual decline in the number of retail businesses performing personal repair and other miscellaneous services.

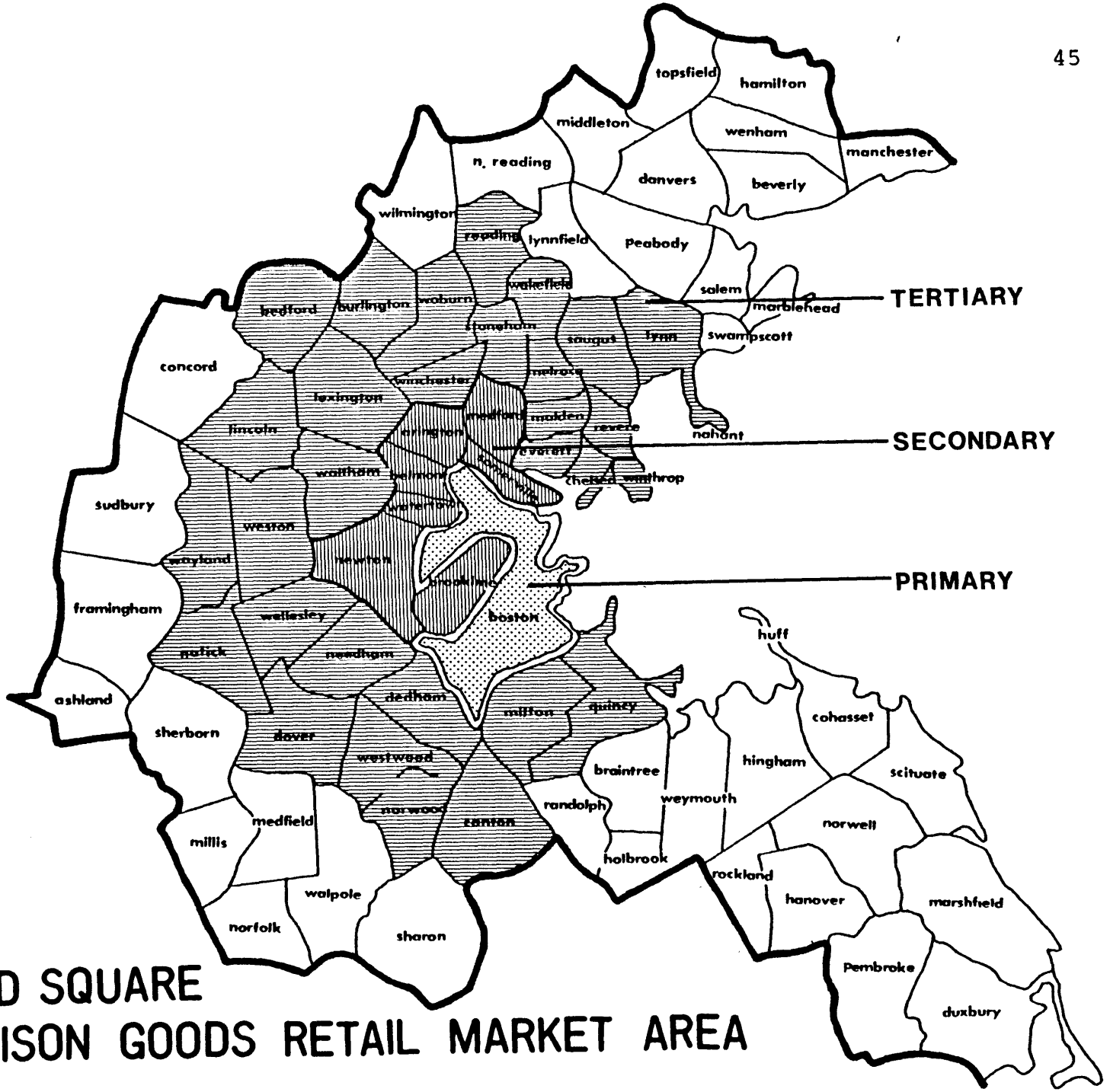
Through the above quantitative and qualitative observations on the retail mechanics of Harvard Square, a forecast of potential retail sales was made based on an estimate of increased purchasing power, which resulted from growth in the number of households and real income in the market area, and estimates of future expenditure patterns for different types of retail goods by regional consumers.

B. Shoppers Goods Retail Development Opportunities

A survey of both merchants and shoppers in Harvard Square was made by Gladstone Associates in order to define the market area from which Harvard Square retailers are presently drawing trade. Survey results from "visitors" in the Square show that approximately 50 percent of shoppers interviewed came from either Cambridge or Boston. These areas were then defined as the "Primary Market Area". A secondary market area was delineated, consisting of the surrounding cities and towns (including Brookline, Newton, Watertown, Belmont, Arlington, Somerville and Medford) from which an additional 25 percent of the Harvard Square shoppers come. The remaining 25 percent of shoppers interviewed (evidence of the healthy inflow in retail sales) were divided between residents of other more distant cities and towns in the Boston Metropolitan area, and tourists from outside of the Metropolitan region.

A forecast of additional supportable shoppers goods retail space in Harvard Square is closely related to the pending public policy decisions which will have a direct bearing on the overall retail climate. Accordingly, the forecast is stated below in terms of two broad categories:

- The "modest growth" category is envisioned for the Square if the present "specialty" retail environment is maintained in Harvard Square (i.e., no "chain" or department stores); conti-



HARVARD SQUARE
COMPARISON GOODS RETAIL MARKET AREA

nued high rents/land prices require high sales productivity per square foot of floor area; and if present levels of traffic and parking accomodations are maintained, at minimum.

Under these conditions, there appears to be only a minimal demand for additional shoppers goods retail space, approximately 10,000 to 20,000 sq.ft., over the next 10 years. More specifically, it is anticipated that a projected increase, between 1975 and 1985, of approximately $8 to $10 million in retail sales in Harvard Square will be absorbed primarily in current spaces, to offset the pressure of increasing productivity requirements.

In contrast, the "expansion category" would assume a broadening of the market either geographically and/or by the types of goods and services offered, primarily through development of a major new increment of retail space in the Square (bringing in both new outlets and department store-type goods and services, and providing a "critical mass" which broadens the Square's market area and depth); the expansion category would also assume the provision of adequate parking and reasonable access and egress over and below the present levels of service.

If this category is the case, then it will expand the Square's penetration into the primary and secondary market areas, as well as make a modest pene-

tration of a tertiary market area. In specific terms, an increase of perhaps $35 to $45 million in retail sales would be possible - resulting in a corresponding increase in supportable floor area of up to 100,000 sq. ft. (and implicitly, holding down rapid rent increases in current retail space in the Square).

C. Convenience Goods Retail Development Opportunities

Forecasts of supportable convenience retail areas, similar to the above analysis, also take into account two distinct categories, the "status quo" conditions with little significant new residential developments in the Square; and expansion resulting from the addition of 2,000 new housing units in the Primary Market Area. Under the status quo conditions, total supportable square footage for convenience goods is expected to remain relatively stable, with modest increases in convenience goods sales and a very moderate increase of approximately 5,000 sq. ft. of supportable space. The addition of 2,000 households in the expansion category results in an increase of approximately $1.5 million in sales and a net gain of an additional 15,000 square feet of retail space over current levels.

In short, analysis of the two categories above, which representing the likely extremes of future residential developments, illustrates a limited potential for new convenience goods retail development, with a maximum of perhaps 15,000 square feet. From a practical

viewpoint, this estimate of new convenience space would likely be exceeded in the form of eating and drinking establishments, which have a regional rather than a local draw. Food and drug stores will characterize most future convenience space expansion in Harvard Square as a direct function of new residential development which may occur.

II. Office Market Indicators

A. Past and Present Trends

Between 1960 and 1974, an annual average of 1.2 million sq. ft. of new major office space was constructed in the Boston Metropolitan Area; in the last five years, moreover, the annual average has been on the order of two million sq. ft.

According to detailed surveys by the Ryan Elliot Company, office space in the Metropolitan region is distributed as follows: 60 percent in downtown Boston, 30 percent in Route 128 - outer suburban areas, and 10 percent in the inner suburbs, which was defined as areas within a five-mile radius of Kenmore Square but excluding downtown Boston. Thus, inner suburban locations (such as Cambridge) represent only a minor share of the Metropolitan office market, and most of these office spaces are in single purpose buildings - such as is found in Technology Square and the State Street South development in North Quincy.

In the City of Cambridge, a more detailed inventory of office construction by year, based on building premit data, indicates an average annual construction level of approximately 120,000 square

feet between 1961 and 1975. In contrast to the Metropolitan trends, the peak years of office space development in Cambridge were in the early and mid-1960's, primarily as the result of the development of Technology Square; since 1971 an average of only 80,000 square feet of new office space has been built annually in the City of Cambridge.

Recent obsorption trends in Cambridge office facilities - from 1972 to the present - indicate that the Harvard Square area has captured nearly 50 percent of the Cambridge office market during this period. Specifically, new office occupancy has averaged nearly 26,000 square feet per year in each of the last three years in the Harvard Square portion of Cambridge, or half of the City's average new space occupied, 55,000 square feet per year. In Harvard Square, new office occupancy has been evenly divided between competitive and non-competitive facilities, while in the balance of the City a major share of recent office demand has derived from competitive space occupants.

Rent levels in the competitive office space surveyed generally ranged from $7.00 to $9.50 per square foot of gross leasable area. Some non-competitive tenants - such as the Polaroid Corporation in Technology Square - have long term leases at $6.25 to $6.75 per square foot.

B. Forecast of Office Demand

On the Metropolitan level, the demand for new office construction is a function of the expected growth in employment be-

tween 1975 and 1985 within those occupations and industries (such as professional, managerial, clerical, finance, services, etc.) which are generally considered "office using". Based on detailed forecasts by occupation and industry of future employment growth by the Massachusetts Department of Employment Security, an estimated annual increase of approximately 6,200 office-using employees will be derived for the 1975-1985 period.

Within the Boston Metropolitan Area, an aggregate demand for new office space of approximately 1.7 million square feet annually is expected between 1975 and 1985.

Subdividing the Metropolitan office demand into its expected geographic components, an allocation of 10 to 15 percent was estimated to accrue to the inner suburban region. Specifically, an annual demand ranging from 170,000 to 250,000 square feet of office space is expected in the coming decade in the inner suburbs of which Cambridge is a part.

Within this office market framework, the Harvard Square area could reasonably capture 8 to 10 percent of the inner suburban office development potential. This would result in an annual absorption ranging from 13,000 to 25,000 square feet, a conservative estimate consistent with recent absorption levels.

The principle variables affecting future development of office space in the Harvard Square area are

- Appropriate land costs and building economics;
- Site availability; and
- A resolution of parking/circulation issues in the Square, including the replacement of present parking spaces to be lost, the location of off-street parking facilities, and the amount of new all-day parking spaces to be allocated to servicing new office developments.

New office spaces are likely to be evenly divided between single purpose and general occupancy space, consistent with past trends in the Square. Most new occupancy will likely be of a specialized nature, such as smaller professional offices, quasi-public institutional users and the like. Some influx of larger tenants may occur as the mass transit service to the Square is improved.

III. Residential Market Indicators

A. Past and Present Trends

During the 1960's, an average of 9,000 new dwelling units were added annually to the Boston Metropolitan region. The Metropolitan Core Area and the City of Cambridge captured only a minor portion of this new construction with 770 and 242 units per year, respectively - and only approximately 30 new units were constructed in the Harvard Square section of Cambridge.

For the Metropolitan region, the tenure characteristics of housing, between owner and renter occupants, were evenly split. In contrast, in Harvard Square,

the City of Cambridge, and the Metropolitan Core Area, new housing was virtually entirely for rental occupancy. Unit types tend to be oriented toward smaller households, with efficiency and one bedroom apartments predominating, and a much smaller number of two and three bedroom units available.

Rent levels, on the average, range from $200 to $240 for efficiencies, and $240 to $285 for one bedroom units - though a number of one bedroom units were offered at $300 to $325. Rents for the few two and three bedroom units ranged around $330 to $335 and $450 to $525, respectively.

In terms of tenant types, there was a clear distinction betwene buildings in which students were allowed or were excluded. In the non-student apartments, tenants tended to be primarily young singles and couples iwth professional jobs, many of whom worked in either Cambridge or nearby portions of Boston. There are relatively few older couples and retired persons in these apartment projects, particularly in locations close to Harvard Square.

B. Residential Development Opportunities

A forecast of aggregate housing demand for the Harvard Square market area through 1985 was made from the following three elements: a net increase in the number of households, replacement needs, and an allowance for vacancy.

An annual average of approximately 900 new housing units is expected within the Metropolitan Core Area between 1975 and

1985, a level very comparable to the experience of the 1960's. On the Metropolitan regional level, an aggregate demand of 11,000 to 13,000 new dwelling units per year for the next ten years is expected, which is also very consistent and even slightly more conservative than the 1960-1973 trends would indicate.

An aggregate demand for 1,400-2,700 new dwelling units can be anticipated in the Harvard Square area over the next decade, according to an estimate by the Gladstone Associates. However, of this quantity, it is reasonable to expect that only 300-500 units would appear to be supportable at rent/price levels high enough to offset the high land values in the immediate Harvard Square area. In another way, the high land values in the Square area, around $50-$60 per square foot, in addition to the limited number of available sites and premium construction costs resulting from poor soil conditions, will limit the development of sufficient housing units to fully meet potential housing demand.

IV. Quality Hotel Market Indicators

A. Past and Present Trends

New construction of quality hotel facilities averaged approximately 230 rooms in the Boston-Cambridge area between 1960 and 1973. Most of this activity occured in the early 1960's. Overall, the City of Cambridge captured approximately 25 percent of the new construction of quality transient facilities in the Boston-Cambridge area between 1960 and 1973.

A survey of the quality transient facilities in the City of Cambridge showed that the City-wide occupancy rate was approximately 75-77 percent. Hotels in Cambridge rely primarily on university-related and other business visitors as well as tourists for their trade; on the other hand, conventions do not play a major role except as "spillover" from Boston when hotels there are fully occupied.

B. Forecast of Development Potentials

Based upon the current occupancy levels in excess of the breakeven point of 70 percent and an expected increase in demand for quality rooms of 4 percent annually, which reflects an increase in tourists, commercial visitors, and conventions; a total increase of 320 rooms in hotel demand is expected in the City of Cambridge through 1985. The Harvard Square area can reasonably be expected to capture approximately between 25 and 50 percent of this increased demand. Resulting development potential would be from 80 to 160 rooms for the ten-year period.

The completion of the new Hyatt Regency Hotel on Memorial Drive with 500 luxury rooms is one factor which affects the expected demand in Harvard Square; the problem associated with the proposed 360-room Holiday Inn at Nutting Road is a further indication of the limited market for hotel development at present. The Holiday Inn was intended primarily to serve the increase in the number of tourists that would have been generated

with the locating of the Kennedy Museum in the Southwest Sector; however, the subsequent erosion of this important support makes the prospects for development of this facility very dim.

The possible development would be a university-affiliated overnight lodging or hospitality facility. Like Princeton's Princeton Inn and Dartmouth's Hanover Inn, such a property would presumably attract some university-related business and alumni visitors to the Harvard Square area.

V. Summary of Market Findings

With respect to market-oriented land uses in the Harvard Square area, the market study identified the following conditions.

A. Retailing

- Future development of significant amounts of additional retail facilities in the area will be conditioned primarily by the Square's future ability to absorb additional vehicles and pedestrians, and to provide adequate parking space.
- The future retail expansion is likely to consist primarily of speciality goods and services outlets, similar to the present activities in the area.
- Up to 100,000 square feet of added specialty retail space is supportable in Harvard Square over the next decade, if parking and vehicular circulation and access are provided to serve regional consumers. Pedestrian

environment improvements will also be desirable and important in establishing and maintaining this unique regional appeal.

B. Housing

- Up to 2,000 housing units could be absorbed in the Harvard Square area over the next decade.
- However, given high land costs and poor soil conditions in the area, it is expected that only 300-500 dwelling units can be absorbed in this period at the expensive rent levels or sales prices dictated by current development economics in the Harvard Square area, unless major amounts of assisted housing are developed in the area.

C. Offices

- Harvard Square is rapidly becoming one of the prestigious office locations in the Metropolitan Area.
- However, larger employers report increasing problems and employee dissatisfactions with the Square's difficult access/parking situation.
- If parking and access problems could be solved, up to 250,000 square feet of new office space might be absorbed in the area by 1985.

D. Hotels

- No significant demand for a net addition of new hotel rooms is anticipated in the area, due to the current room availability and nearby current expansion.

- However, a university-affiliated "College Inn" could be quite successful in the area.

(See Appendix for tables and illustrations relating to retail development potentials, office space availability, consumer surveys, etc.)

DEVELOPMENT PROGRAM AND PHASING

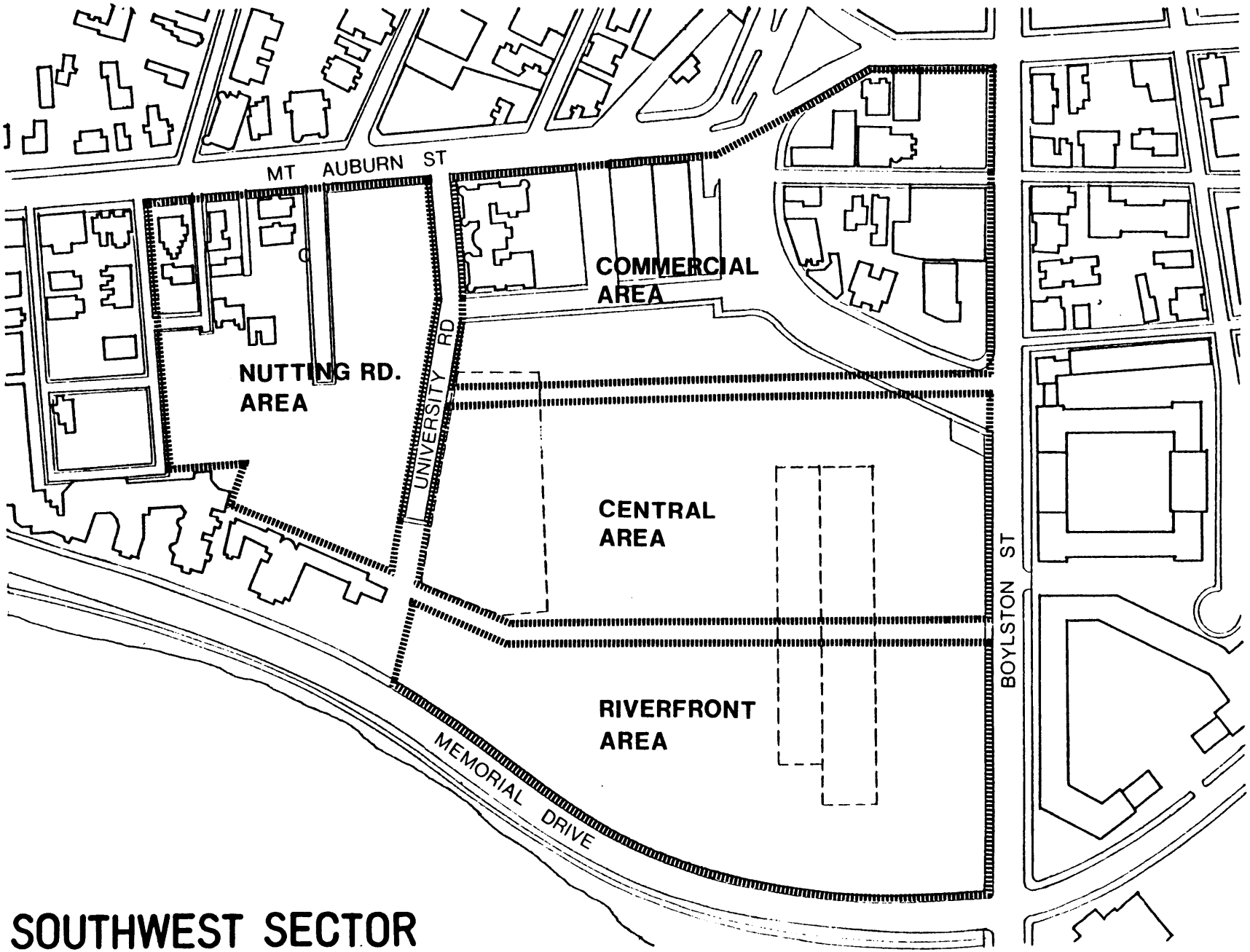
I. Land Use Policies

The development pattern of the Southwest area should be a mixed-use development, which can be divided into four areas (illustration p. 59):

A. Commercial Area

Mixed-use developments should be encouraged in the Commercial Area within the Southwest Sector. The following uses and activities are appropriate in that part of the area: office space, restaurant and cultural-entertainment facilities, housing, small hotel, general merchandising, retailing, and parking facilities.

Harvard University, when building facing the commercial core, should be



SOUTHWEST SECTOR

encouraged to construct a mixed-use development, combining institutional uses and economic development activities in a manner which would represent an integration with the commercial core.

B. Central Area

The most appropriate activities for this part of the Southwest area between the Commercial Area and the Riverfront Area are medium density housing, academic facilities, and open space/plaza.

Residential developments should be permitted to have some sites facing the park in the Riverfront Area, without creating a visual or physical barrier between the Charles River and the Harvard Square area.

Tax-exempt institutional developments should be relatively compact so as to avoid consuming large amounts of valuable urban land.

C. Riverfront Area

The part of the present MBTA yards facing Memorial Drive and the Charles River should be devoted to an open park-like area.

D. Nutting Road Area

Mixed-use development is appropriate in this area and should act as a transition between the Commercial Area and the residential development to the west. It should be primarily medium-density, residential development with only a limited amount of small-scale office space.

To achieve a transition from commercial to residential areas, it is suggested that office spaces be in the eastern part of this area, and oriented

toward the Commercial Area; and apartment buildings be located to the west and south of the present Nutting Road.

Offices in the Nutting Road Area had better be oriented toward relatively small firms. The office space had better be oriented away from the Charles River and toward the Commercial Area, with a facade treatment of office space being as compatible with a residential character as is feasible. Pedestrian entrance to offices from Mt. Auburn Street and Nutting Road is appropriate.

Without representing an expansion of commercial activities into the Nutting Road Area, a limited number of small-scale retail shops and restaurants would be appropriately located at the ground floor and along the main pedestrian walkway.

II. Urban Form

In order to provide a connection to the existing business district, and to avoid creating a development pressure on the residential neighborhoods to the west and the Harvard Houses to the east, the more intensive development activity should be located in the Commercial Area and the Central Area. Meanwhile, it should be sympathetic to the park-like character of the Riverbank and to the height and scale of the buildings presently on Memorial Drive.

The continuity of brick as the dominant building material used along the Riverfront had better be maintained. Toward the Commercial Area, other materials could be considered but the scale,

durability, texture, and color which are achieved by the use of brick should be prime criteria for judgement.

III. Open Space and Pedestrian Movement

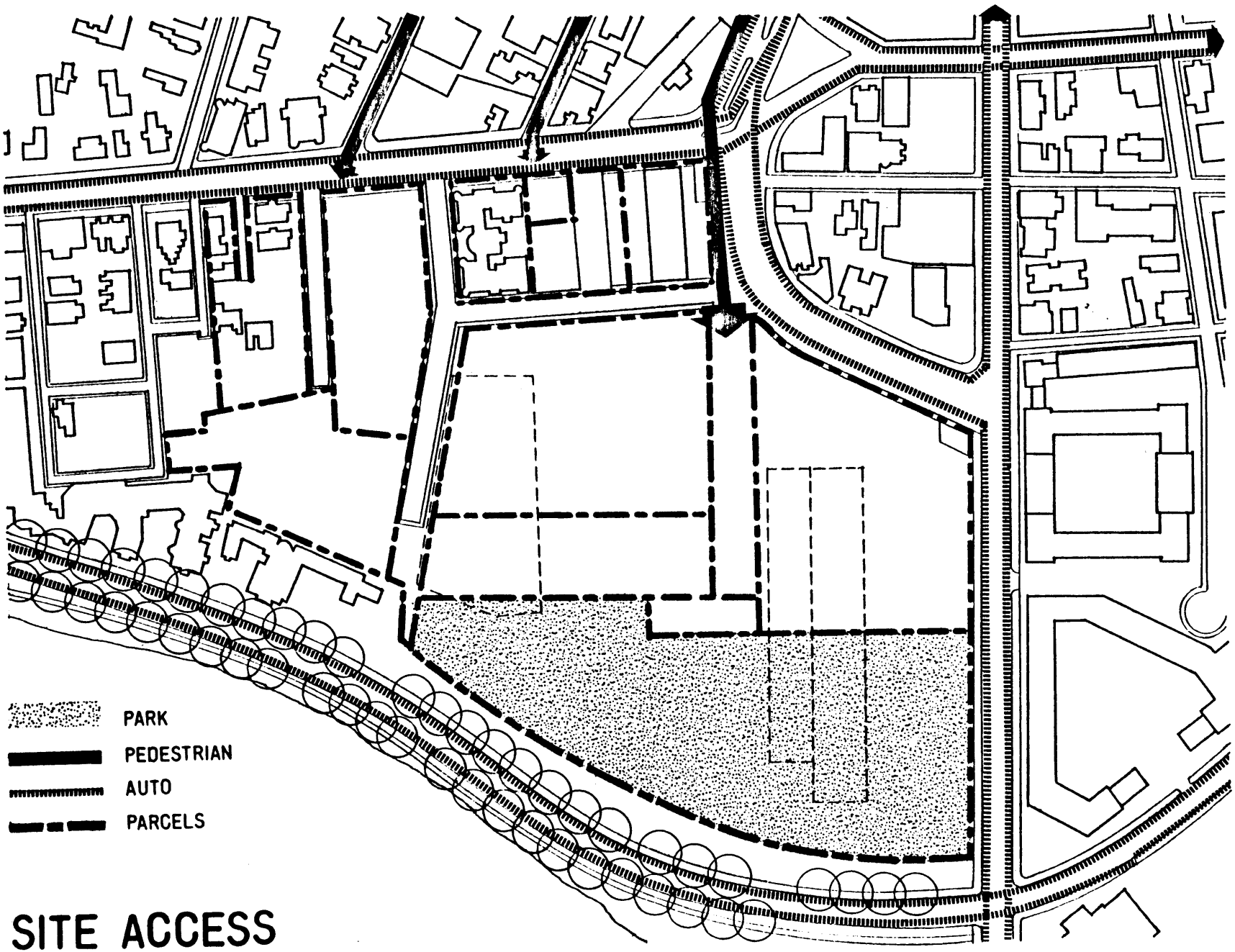
The presently undeveloped Southwest area provides an outstanding opportunity to create a primarily pedestrian environment within the area, in which pedestrians should be separated both vertically and horizontally from vehicles.

The open space system in the Southwest area should serve as an important element in organizing the relationships among the four areas; provide a transition from commercial to residential and academic uses nearby; and provide a focal place which is an important open space in its own right.

The open space located in the Riverfront should provide for a broad spectrum of age groups and user groups, and should include different types and sizes of spaces, such as small sitting areas, large grassy areas, and some hard surface areas for group events and temporary exhibitions.

Pedestrian walkways should provide connections to other parts of the Southwest Sector and to the Harvard Square area. Three categories are suggested:

- Main Pedestrian Way
  An important pedestrian way through part of the commercial area, along part of Eliot St. and Brattle St. leading to the Kiosk area in Harvard Square. (See "SITE Access" p. 63.)
- Secondary Pedestrian Ways
  Pedestrian ways on a more intimate



SITE ACCESS

scale should be developed, one westerly along Nutting Road to connect with Story Street, the other passes by Craigie Apartments and the Harvard Motor Hotel, crossing Mt. Auburn St. through the middle of the Brattle-Story block leading to Brattle St.

- Walkways

  Various walkways and paths, connecting the Charles River, Memorial Drive, the Nutting Road area, Mt. Auburn St., and the Harvard Houses should be made.

The elements of streescape (lighting, signs, paving, canopies, trash receptacles, mail boxes, seating areas, kiosks, outdoor merchandise containers, and so forth) should be organized into a unified concept. A new lighting system which is scaled to pedestrian evening activity should be installed. A total system of paving of pedestrian ways utilizing more textured materials such as brick or stone should be installed under a public improvement program. Weather protection should be considered as an amenity. A system of ground floor set-back, canopies, and veranda should be provided to allow continuous pedestrian circulation under cover.

Focal places should be located at the proper places. These are spaces large enough to accomodate the varied activities, which may constitute an end in themselves, rather than a space which one passes by or through. Appropriate actviities here are exhibitions, small

street fairs, small concerts, public speeches, public services, or simply passive sitting and outdoor enjoyments.

Niches should be scattered in the Southwest Sector. Those are small places which occur adjacent to sidewalk or walkways and accomodate various special pedestrian-related functions such as eating, vending, sitting, small exhibits, etc.; these cannot occur without impeding movement. Numerous niches of varying sizes and characters should be encouraged.

IV. Parking

A. Existing Conditions

Even if no new parking spaces are provided, the number of existing parking spaces in Harvard Square could be reduced by nearly 1,500 spaces due to elimination of

- About 550 illegal parking spaces in regular use;
- About 230 existing legal curb parking spaces;
- About 700 legal spaces in off-street lots due to new building development; and
- Curb-side parking spaces (temporary) that will result from the construction, and particularly the related traffic detours of the extension of the Red Line rapid transit in Harvard Square.

The construction of 1,500 new public parking spaces in off-street garages is referred to as a replacement parking program that provides no net increase in parking spaces, and is seen as a mini-

mum effort to be undertaken.

B. General Policies for Parking

1. Provide a sufficient amount of parking to enable the Harvard Square commercial area to retain and enhance its position in the City's economic system without forcing it to become increasingly dependent upon the automobile.

2. Provide off-street parking primarily for replacement parking and to meet the municipal essential requirements for new development.

3. Control the amount of parking so that public transportation remains an attractive alternate mode of travel.

4. Provide off-street parking garages and gradually replace much of the curb-side parking. (See "Existing Parking", p. 67.)

C. Alternate Modes of Transportation

Suggestions for alternate modes of transportation are

1. Encourage increased use of public transportation;

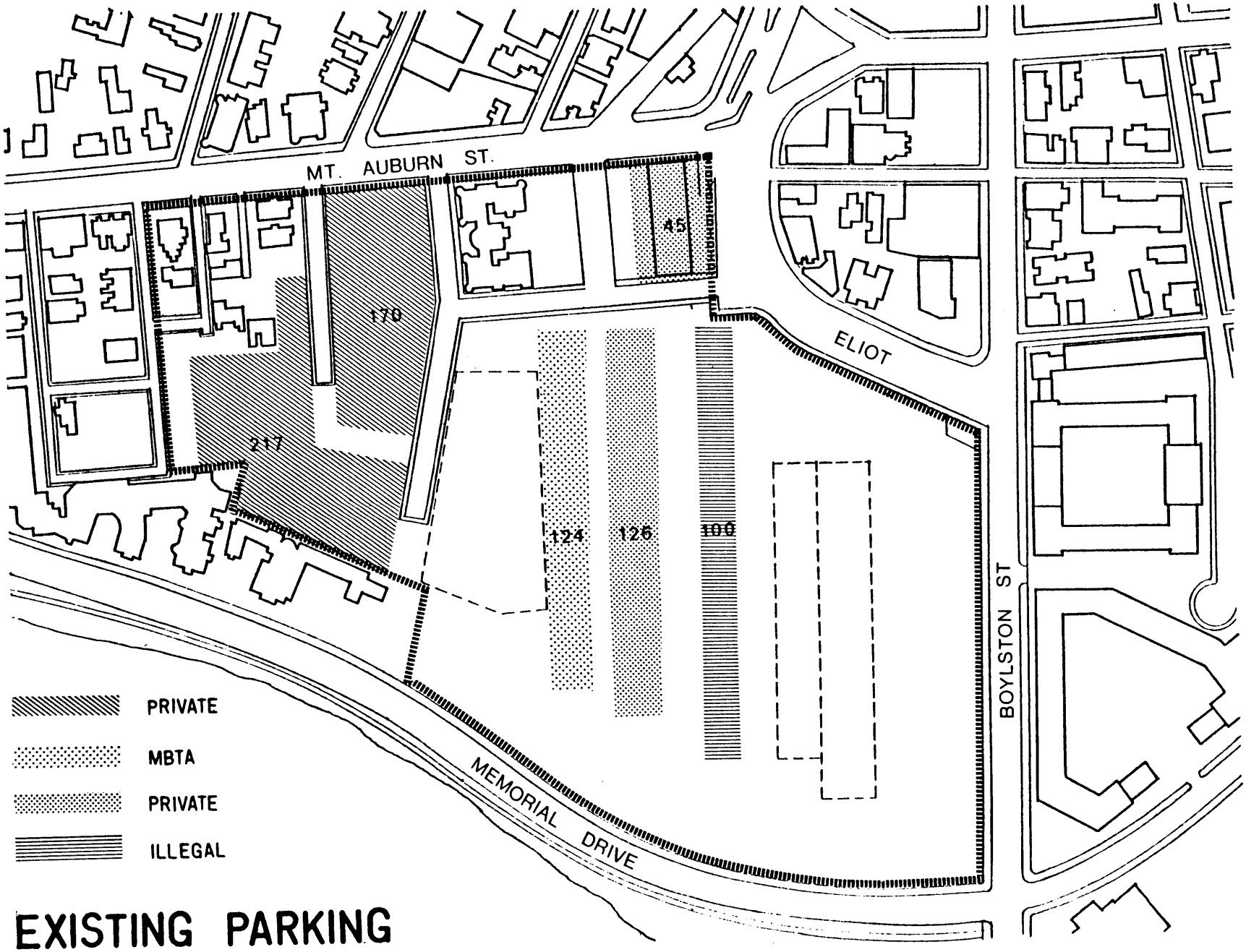
2. Encourage walking by locating new housing within reasonable walking distance;

3. Improve bicycle routes and storage;

4. Designate specific bicycle routes in the Harvard Square area, provide physical improvements to make such routes safe, attractive and relate the location of bicycle storage facilities to the convenience of the riders.

5. Encourage car-pooling.

6. Provide a specific amount of parking, consciously set the rates for use of parking facilities, according to their



EXISTING PARKING

location and the time of day or night, to encourage a "turnover" of parking for shoppers and buyers near the commercial area; make parking charges more expensive than public transportation; encourage car pools by offering rebates for multi-occupant cars; discourage all-day parking.

Parking for the occupants of housing, commercial, or other developments in the Southwest Sector can be accommodated in the same parking garage as municipal parking. Parking garages constructed in the Southwest area, regardless of the owner or developer of such facilities, should be designed in manner to promote multiple parking occupancy so that the most efficient around-the-clock use of expensive parking facilities can be achieved.

V. Service and Goods Movement

Deliveries and the movement of goods is the lifeblood of commerce. The present haphazard service and goods movement practices, as symbolized by the double-parked truck blocking a street, or by the sidewalk blocked to pedestrians, are unsatisfactory to the general public and costly to the businesses.

In the Southwest Sector, there should be established an integrated loading-service system which minimizes conflicts between pedestrians and traffic movement in the area; all new individual developments should be required to be connected to that system. Service-loading should take place entirely within the area's loading-service system, and not on the

boundary streets, such as Mt. Auburn St. or Boylston St.

Furthermore, to investigate the feasibility of small off-street freight transfer and delivery stations and storage in the area, possibly in conjunction with off-street parking, to reduce the frequency of deliveries, and to permit deliveries to businesses to be made during off-peak hours should all be considered.

VI. Public Transportation

As presently planned Line D-2, the northwest extension of the Red Line, would proceed from Harvard Square in a tunnel directly up Massachusetts Avenue, with a station at Porter Square, and thence to stations at Davis Square in Somerville, the Alewife area of West Cambridge, and Arlington Center, as part of the first phase of construction. The first phase would cost $315 million. Subsequently, when funds become available, perhaps in the 1980's, the Red Line might be extended to Arlington Heights, or possibly through Lexington to a terminus at Rt. 128.

At present, most of the bus and trackless trolley lines terminate at the Harvard Square station. That system of bus routes, designed many years ago, permits easy transfer to rapid transit trains. However, with the extension of the Red Line, about half of the bus lines now coming into Harvard Square could either be eliminated or routed into new rapid transit stations along the Red Line extension. The re-

maining bus lines should be reoriented to a new system which provides better crosstown service in Cambridge.

A. Proposed Land Uses

According to the Policy Plan, the general land uses in the Southwest Sector Development are

- The Commercial Area - mixed use; appropriate activities include office space, restaurants and cultural-entertainment facilities, housing, motel, small-scale general merchandisers, retailing, and some underground parking facilities.
- Nutting Road Area - office space, ground-level retailers, conventional apartment buildings, owner-occupants or family-type residentials with underground parking.
- Central Area - specialties commercial space, office, open plaza, first, second/third floor retail, institutional facilities, below-grade parking.
- Riverfront - open-space park.

B. Program

Program for the new Southwest Sector Development is as follows:

- Retail space: 75,000 sq. ft.
- Office space: 180,000 sq. ft.
- Residential: 350 units.
- Institutional: 100,000 sq. ft. for phase 1 construction.
- Parking: 1,300 spaces.
- Park: 5.06 acres.

Through investigation of Program for the John Fitzgerald Kennedy School of Government, which was prepared by Har-

vard University in August, 1976, certain findings should be stated here for future Southwest Sector development:

- Under Site Requirements section C, Parking: "No parking spaces are to be provided on this site. Requirements for parking will be met from the University's overall pool or from participation in a parking structure in the Related Facilities development."
- Under Phasing, section A, 3: "The MBTA may use the Bennett Street Yards until alternative storage and maintenance facilities are found... The MBTA must vacate the site by February, 1979 (2 1/2 years after legislation)."
- Under Phasing, section A, 4: "The MBTA may use the Pedestrian Connector and the west portion of the Park for parking, construction staging and interim transport up to August, 1984 (8 years after legislation). The Pedestrian Connector must be kept open for access to the completed portion of the Park."
- Under Harvard Futures: "Fortunately, Harvard has no need of the remainder of its site at this time and can accept the MBTA requirements more easily than the rest of the site. However, every effort must be made to ensure the MBTA does vacate the site in 8 years."

While the dates are written into law, if the MBTA runs into delays in moving the buses off Bennett Street or the Red Line extension has construction or political delays, clearly the target will be viewed as flexible by the State.

Phasing for the Southwest Sector Development seems to be greatly influenced by the Red Line extension and MBTA bus routes. However, for Harvard to build Phase I 100,000 sq. ft. of the School of Government and Institute of Politics, now is the very moment to urge Harvard to "ADD-IN" below grade parking facilities there. As stated in previous sections, the inadequate parking is the most serious factor which might totally block the future Harvard Square Development. Therefore, every single square inch of land to be used here must be invested to the Harvard Square area as a WHOLE.

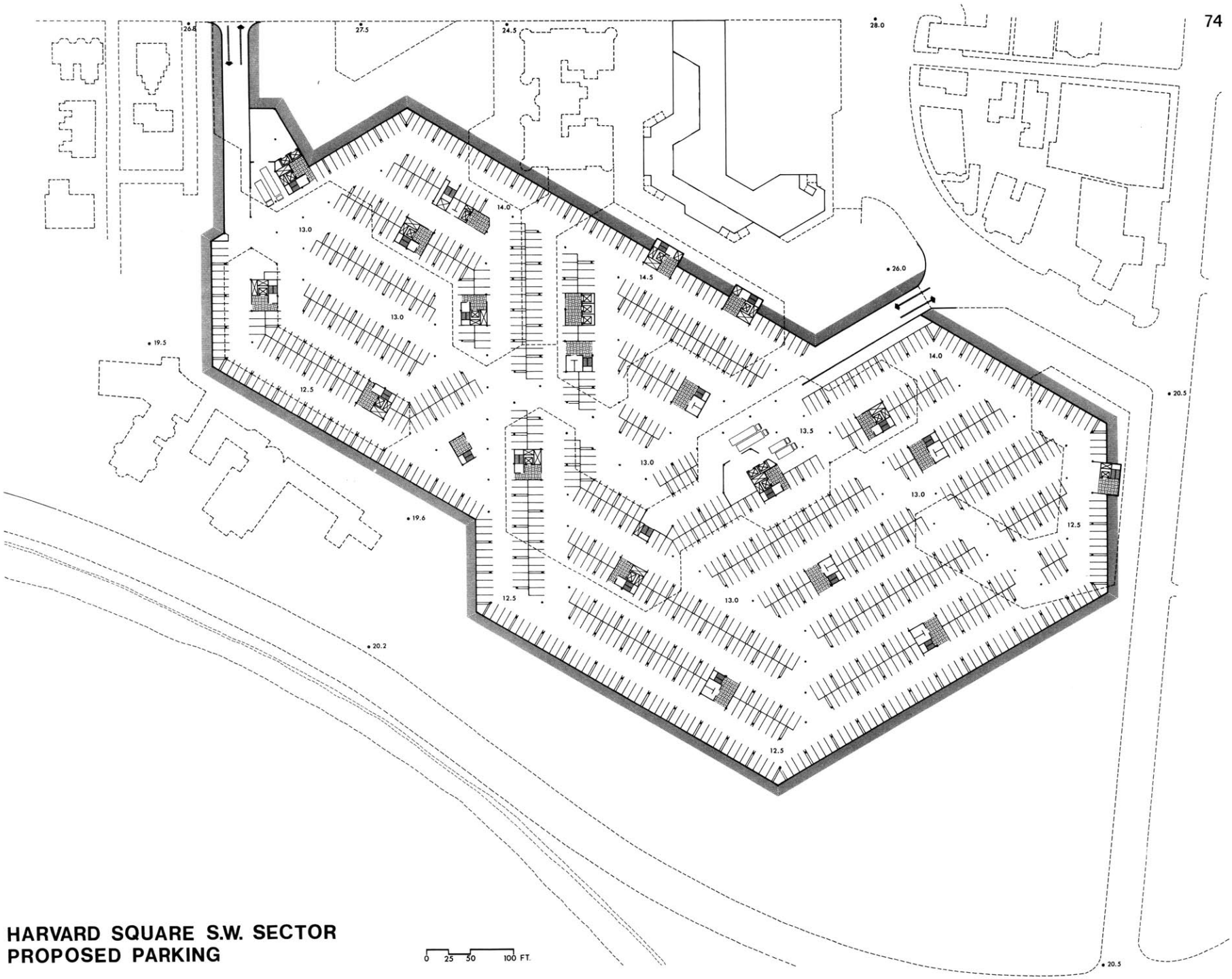
The remodeling and rehabilitation of the Craigie Apartments and Harvard Motor Hotel could be Phase I development for the Southwest Sector. Suggestions are to reuse the basement and backyard as commercial space at Craigie Apartments; and to remodel the first and second floors of the Harvard Motor Hotel to be a commercial, small office space; and to create one level below grade retail environment to emphasize the outdoor space feeling with a street cafe on Craigie's backyard across the pedestrian walkway.

Phase II starts from the Nutting Road Area to build underground parking, first floor retail, small offices and 180 housing units.

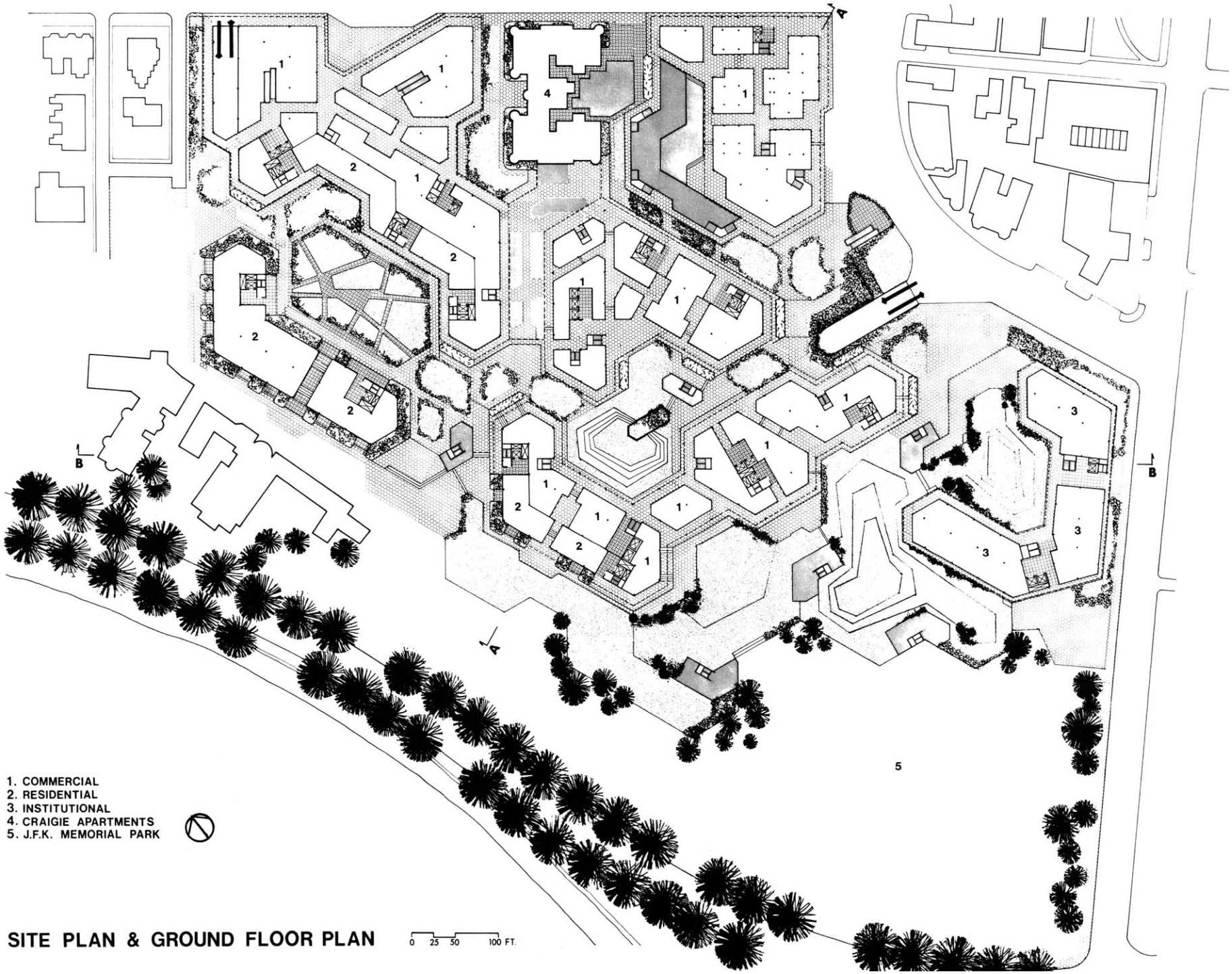
Phase III: hoping that the Red Line extension and MBTA bus routes are finished around 1984, the extension of development in the Commercial Area, office, retail, housing in the Central Area, and the Riverfront Area park could all start to build after the underground parking has been finished. Then, in Harvard's Phase II, 200,000 sq. ft. of the School of Government and Institute of Politics could start to link the Phase I into the development as a whole.

The new development here should maintain the characteristics of Harvard Square urban forms and urban context as those described in previous sections. However, the total development should be emphasized as being on a pedestrian scale, and use the hierarchy of main and secondary pedestrian ways, walkways, and veranda, plaza/open spaces to create identities and continuity along the whole site.

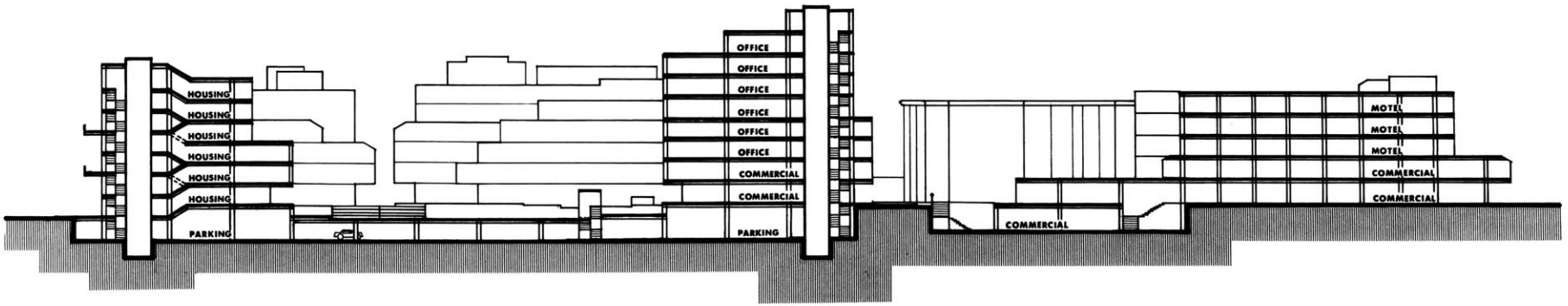
A physical design has been developed (illustrated pp. 74-83) to exemplify the findings of this research and the guidelines of this program.



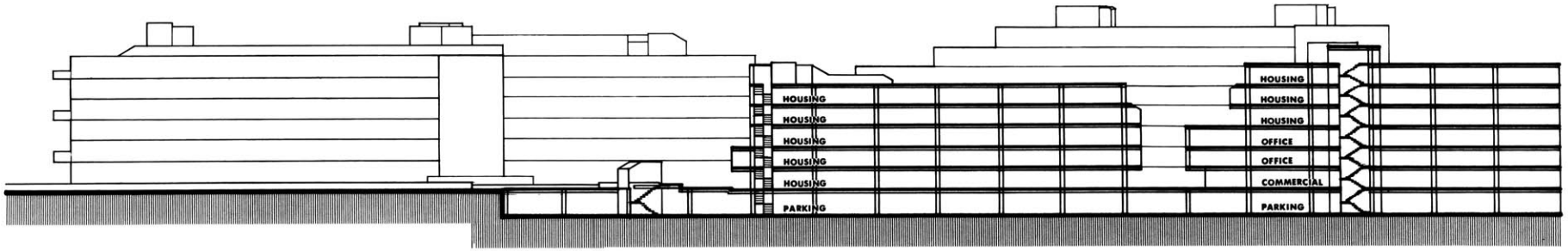
HARVARD SQUARE S.W. SECTOR
PROPOSED PARKING



SITE PLAN & GROUND FLOOR PLAN



SECTION A-A



SECTION B-B

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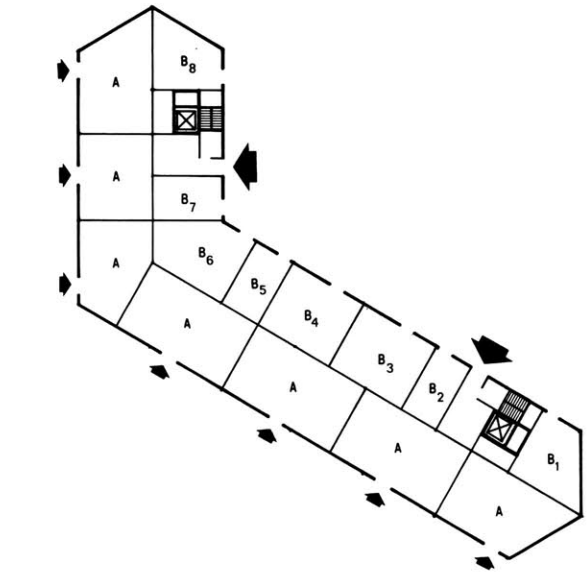
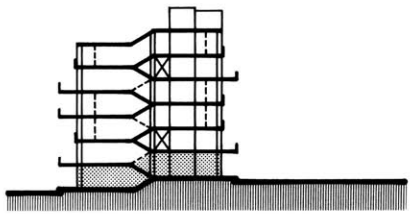
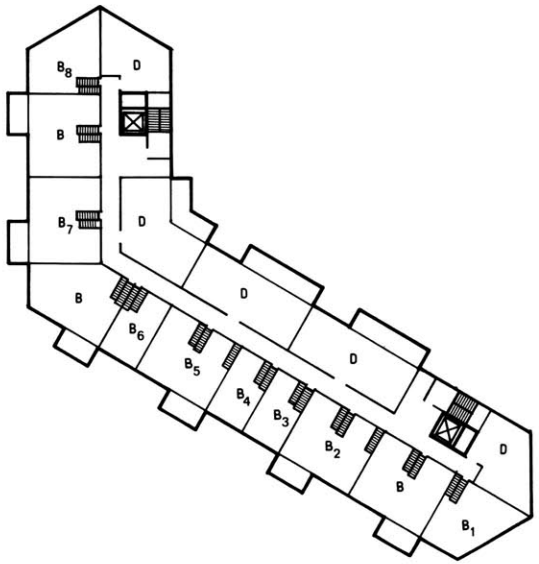
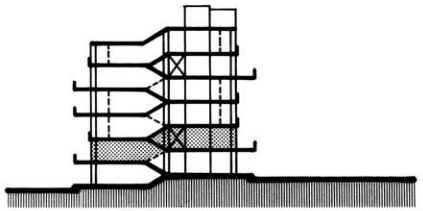




1st LEVEL





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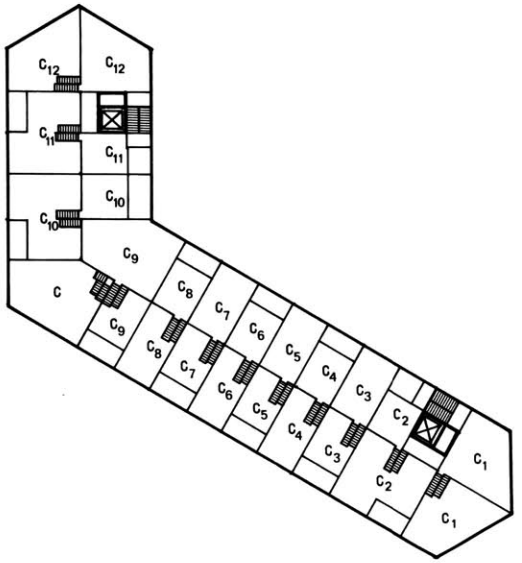
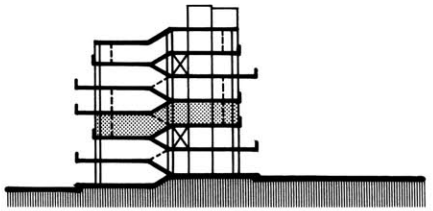
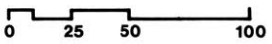
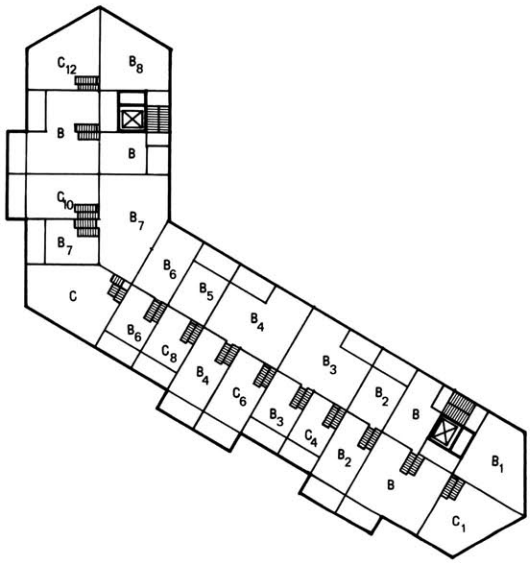


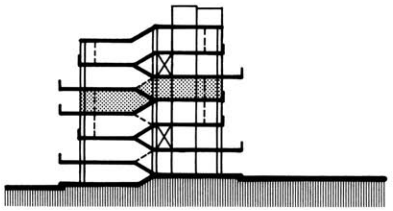


3rd LEVEL

RESIDENTIAL







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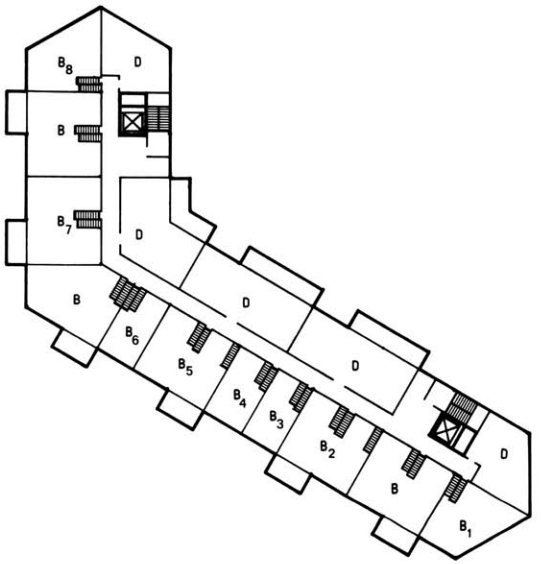

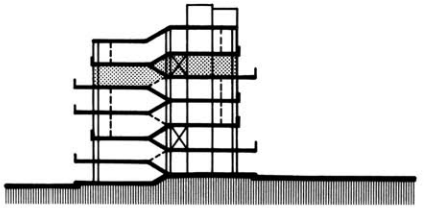

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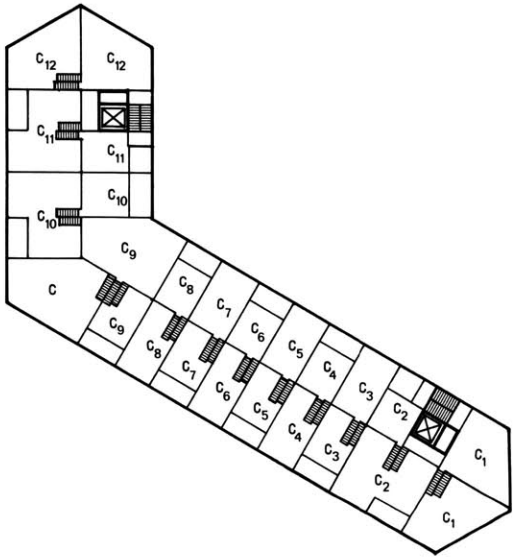

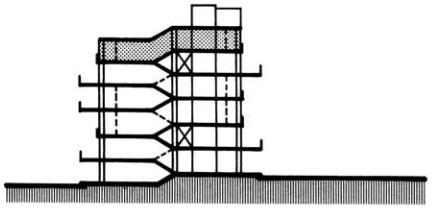

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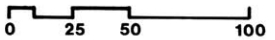
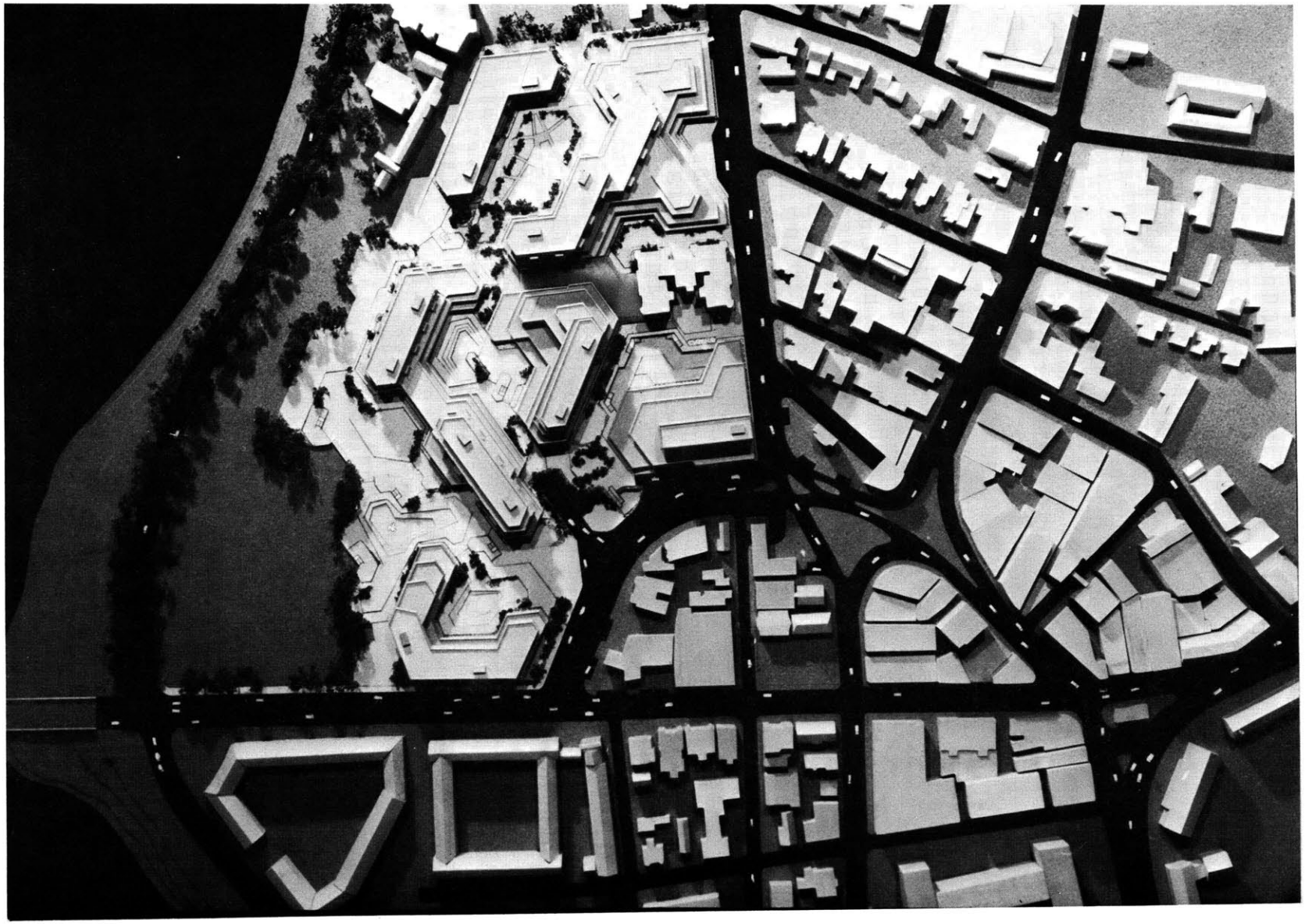
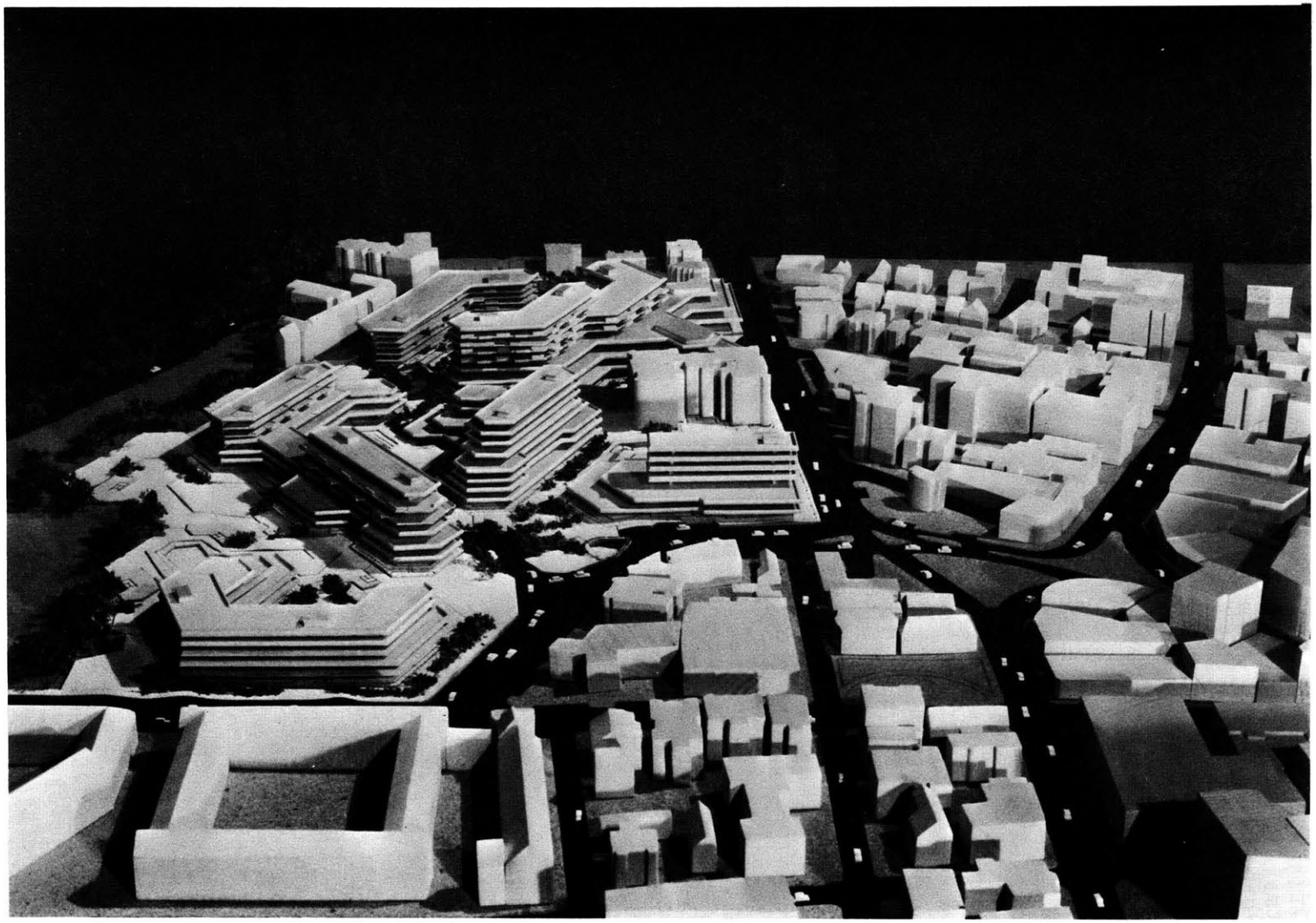
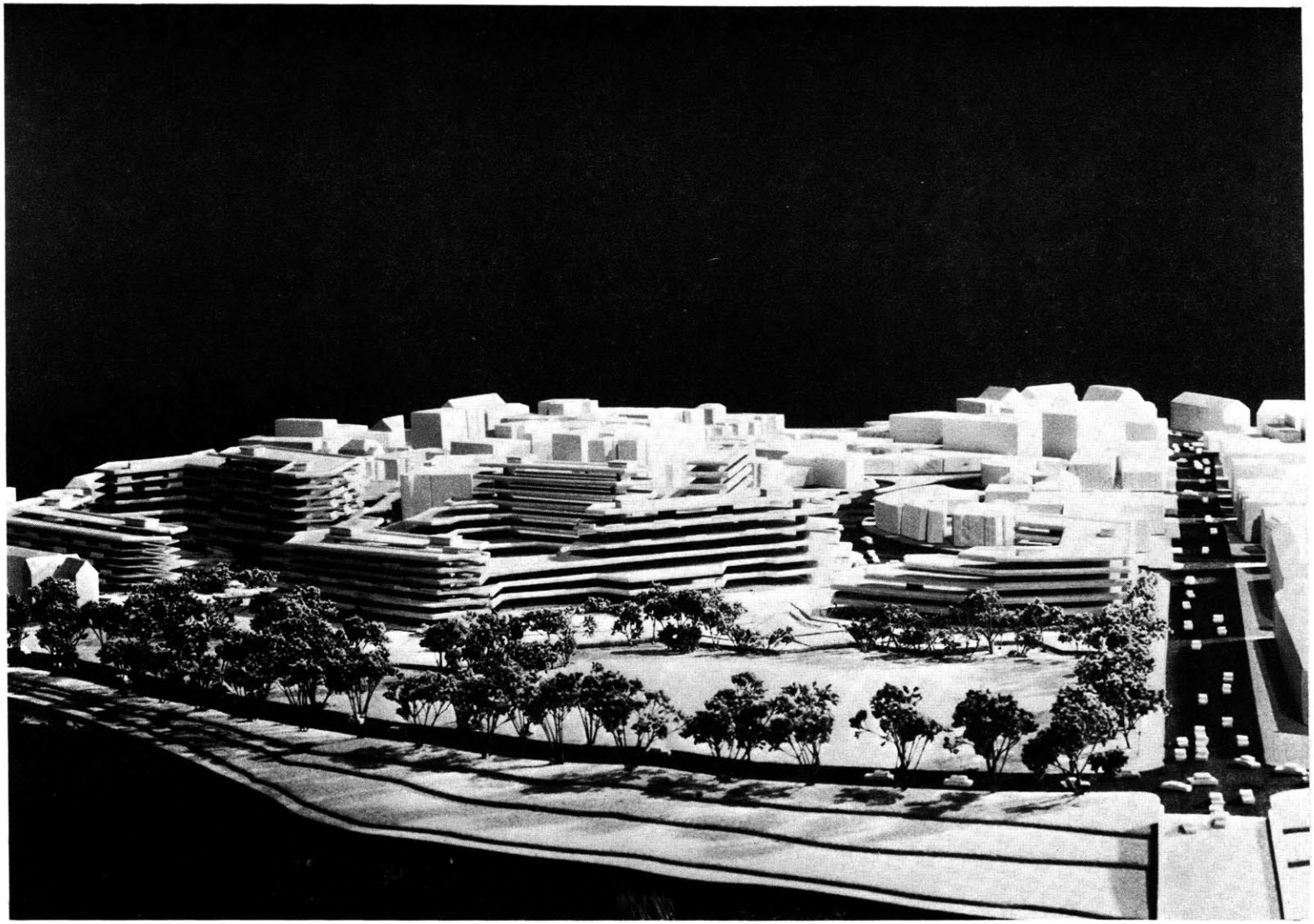
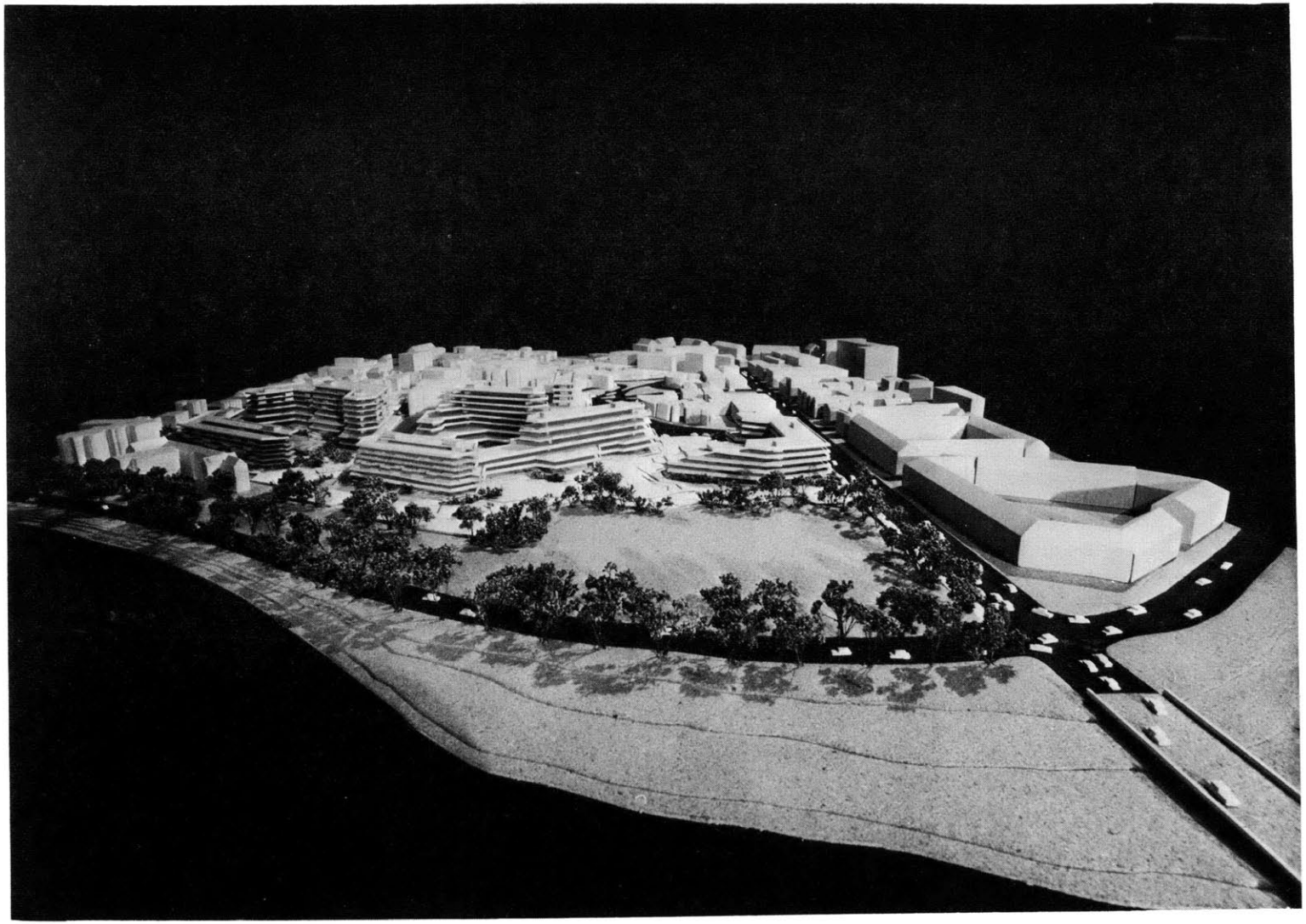










IMPLEMENTATION CONTROL

Some tools and mechanisms should be considered in any efforts to formulate a specific process for controlling future development in the Harvard Square area.

I. Special Assessment Districts

An increasingly popular vehicle for financing public area improvements, such as the proposed pedestrian circulation plan for the Harvard Square area, is the creation of special assessment districts. Such districts are created from those properties which would benefit directly from certain public expenditures, and a special tax assessment over and above the community's normal real estate taxes is levied on these properties to finance

the proposed improvements.

Such districts have been particularly popular as a means of financing pedestrian shopping mall areas. One of the largest of these is Nicollet Mall in Minneapolis, Minnesota. Its approximate cost of $3,000,000 was financed by two special assessment zones, with 80% of the cost being financed through properties in zone I, which included all sites directly abutting the actual pedestrian mall, and 20% of the cost assumed by properties in zone II, those sites lying within one block of the mall.

The important distinction in the application of this assessment is the legal statutory authority to levy, assess and collect taxes, rather than asking for voluntary contributions.

II. Public Parking Facilities

The most important factor which might influence the future development at Harvard Square is parking. Limited parking and congested vehicular and pedestrian circulation systems are the area's critical urban design, economic, and social planning constraints. Also, if the continued encouragement of retail goods and services and entertainment establishments is desirable, it will be necessary to improve the area's supply of parking spaces.

Typically, revenue bonds have been used to finance downtown parking developments, with many communities creating parking authorities whose bonds are guaranteed by parking revenues from facilities controlled by the authority.

In some municipalities, parking authority revenue bonds have been issued with additional backing, including income from other city-owned properties or the full faith and credit of the municipality. Another tactic utilized by parking authorieite is the loan of low-cost bond revenues to private parking facility developers, as has been done in the City of Baltimore, Maryland, for instance.

Parking facilities in some municipalities have been established through special assessment districts, described above. The assessments are typically used to guarantee revenue bonds or to subsidize parking rates in commercial areas. For example, Montgomery County, Maryland, requires developers or property owners to pay an ad valorem tax on their property in lieu of providing full parking facilities under the zoning requirements applicable to their site. These assessments are charged on an annual basis and are used to pay the debt service on the general obligation bonds issued to construct parking facilities to provide the parking space not made available by the property owners.

A particularly interesting variation of this special assessment concept which may offer specific promise for the Harvard Square area is the purchase of parking authority bonds by developers and property owners in lieu of providing required parking on their site. This mechanism has been used quite successfully by various California communities and

has been quite useful in encouraging new but small-scale development on small sites which would not typically offer an acceptable design solution for on-site parking.

In lieu of providing on-site parking required by current zoning, the developer can purchase and retire bonds from the local parking authority, equivalent in value to the construction cost which would have been incurred to provide the number of parking spaces that otherwise would have been required on-site. For example, the parking authority may have previously built (or be planning the construction of) a parking garage in the vicinity of the site with an average cost of $1,000 per parking space (owing to soil conditions). A developer requiring 100 parking spaces for his proposed development could either spend the money on his own site, if an acceptable design solution were available, or could purchase $700,000 worth of parking authority bonds and retire these.

This process offers particularly interesting potential for the Harvard Square area. However, requiring property owners to provide their own off-street parking is unrealistic for many of Harvard Square's small parcels, and will only encourage assembly of larger sites - contradicting the goal of retaining as much as possible of the area's small-scale amenity. Therefore, a hybrid arrangement which allows for the use of certain public agency advantages (such as site assembly and lower-

cost borrowing) but which is financed principally by those property owners who both contribute to the present problem and would benefit most from its solution, would offer an appealing solution for this very significant constraint on Harvard Square's future social and economic viability.

CONCLUSION

A broad array of competing social and economic forces clash in the Harvard Square area at present. It is likely that economic interests will eventually over-ride many other goals, and the Square may easily experience either increasingly dense urban development, if the area's parking and traffic circulation constraints can be resolved; or slow stagnation and physical decline, if these access and egress constraints remain, forcing commercial users to seek alternative, more accessible, locations.

Zoning alone is not likely to effectively guide future change - such static ordinances, buffeted by competing interests, do not typically stand up under

dynamic pressures for change over time. Rather, the empirical evidence is that the zoning process is more likely to be a legislative articulation of economic interests and objectives at a particular point in time - a compact which can readily be renegotiated as the regulated economic forces change.

What is required, and what the establishment of the Harvard Square Development Task Force apparently recognized, is an intelligent, sensitive and complex balancing of these competing forces. Not all parties will be fully satisfied; compromise is implicit, otherwise prolonged conflicts will frustrate the realization of balanced change. New community development tools and processes will be required, as well as artful application of more traditional procedures, including zoning.

What is needed in Harvard Square is a unique response to a unique situation - at the very frontier of the state of the art of controlling and influencing community change. The formulation of a broadly accepted set of policy goals was a start in this direction, since few communities have yet found the energy and will power to engage in such a demanding multi-paritcipant process.

This policy statement needs to be moved forward, however, into a carefully constructed plan which reflects these policy goals; then into a pragmatically managed implementation process which accepts change and seeks to sensitively

guide it rather than fight it.

In summary, it should be recognized that the Harvard Square area is in the process of significant changes - and is likely to be as different in ten years from its present condition as it is different today from its condition ten years ago. Whether this emerging form and content will be compatible with the Policy Plan goals is unknown. But without further work to translate these goals into action, there is no particular reason to expect such a favorable chance event might be achieved by active guidance of those dynamic forces at work in the community.

The future is uncertain, change will occur, and there is insufficient guidance at present toward that future. Zoning alone, no matter how carefully monitored, is unlikely to be sufficient, and yet little else is presently available. Fortuitous chance may intervene, and change within the present controls may well be compatible and desirable. However, it will be most reassuring to the future of Harvard Square to be able to rely on vocal citizens' interest and participation in planning for it.

APPENDIX

The fourteen tables and two illustrations which comprise this Appendix relate to the section on Economic and Market Analysis (pp. 41-57).

SUMMARY FORECAST OF RETAIL DEVELOPMENT POTENTIALS
STATUS QUO vs. EXPANSION SCENERIOS
1975 - 1985

	Retail Square Footage	
	Status Quo[1]	Expansion
Shoppers Goods[2]		
Supportable Space (1985)	180,000 - 240,000	350,000
Less Present Inventory (1975)	230,000	230,000
Potential New Development	0 - 10,000	120,000
Convenience Goods[3]		
Supportable Space (1985)	100,000 - 140,000	110,000 - 150,000
Less Present Inventory (1975)	130,000	130,000
Potential New Development	0 - 10,000	0 - 20,000

1) Assumes Harvard Square maintains its present vitality and market strength, and continues to serve the market it has developed over the last decade - without substantial physical changes which would allow for major expansion of present retail plant.

2) Includes general merchandise, apparel, furniture, books and stationery stores.

3) Includes food, drug and eating and drinking.

Source: Gladstone Associates.

ESTIMATED SUPPORTABLE CONVENIENCE GOODS RETAIL SPACE
HARVARD SQUARE AREA, 1975

	Primary Market Area[1]	Secondary Market Area[2]	Inflow[3]	Total
Number of Households	10,200	30,000	--	--
Estimated Mean Income[4]	$15,000	$14,400	--	--
Aggregate Income (000's)	$115,040	$432,000	--	--
Percent Spent on Convenience Goods[5]	20.1	20.1	--	--
Potential Convenience Goods Sales (000's)	$31,163	$86,832	--	--
Estimated Harvard Square Capture	15 - 20%	5 - 7%	--	--
Harvard Square Conv. Retail Sales (000's)	$4,674 $6,233	$4,342 $6,078	$2,254 $3,078	$11,270 $15,389
Productivity Factor	$115/SF	$115/SF	$115/SF	$115/SF
Supportable Convenience Retail Sq. Footage	40,640 54,200	37,760 52,850	19,600 26,760	98,000 133,810

1) Includes census tracts 3536, 3537, 3538, 3539, 3540 and 3541.

2) Includes the balance of Cambridge and census tracts 1 and 8 in Allston.

3) Estimated at 20 percent.

4) In constant 1974 dollars.

5) Includes expenditures for food, drug and eating and drinking.

Source: Gladstone Associates.

ESTIMATED SUPPORTABLE SHOPPERS GOODS RETAIL SPACE
HARVARD SQUARE AREA, 1975

	1975			
	Primary Market Area[1]	Secondary Market Area[2]	Inflow[3]	Total
Number of Households	251,600	140,700	--	--
Estimated Mean Income[4]	$14,300	$2,631,090	--	--
Aggregate Income (000's)	$3,597,880	$2,631,090	--	--
Percent Spent on Shoppers Goods[5]	15.3	15.3	--	--
Potential Shoppers Goods Sales (000's)	$550,475	$402,557	--	--
Estimated Harvard Square Capture Rate	4 - 5%	2 - 3%	--	--
Potential Harvard Square Sales (000's)	$22,019 $27,524	$8,051 $12,077	$5,306 $6,988	$35,376 $46,589
Productivity Factor	$200/SF	$200/SF	$200/SF	$200/SF
Supportable Shoppers Goods Retail Sq. Footage (S.F.)	110,095 137,620	40,255 60,385	26,530 34,940	176,880 232,945

1) Includes Cambridge and Boston.

2) Includes Brookline, Newton, Watertown, Belmont, Arlington, Somerville and Medford.

3) Estimated at 15 percent of total sales.

4) In constant 1974 dollars.

5) Includes expenditures in general merchandise, apparel, furniture, book and stationery stores.

Source: Gladstone Associates.

ESTIMATED SUPPORTABLE CONVENIENCE GOODS RETAIL SPACE
HARVARD SQUARE AREA, 1985

	1985 (No new residential units)				1985 (Expansion Scenario)		
	Primary Market Area[1]	Secondary Market Area[2]	Inflow[3]	Total	Previous Total	New Primary Market Residents	New Total
Number of Households	10,500	31,000	--	--	--	2,000	--
Estimated Mean Income[4]	$20,850	$18,350	--	--	--	$20,850	--
Aggregate Income (000's)	$218,925	$568,850	--	--	--	$41,700	--
Percent Spent on Convenience Goods[5]	20.1	20.1	--	--	--	20.1	--
Potential Convenience Goods Sales (000's)	$44,004	$114,339	--	--	--	$8,382	--
Estimated Harvard Square Capture	15-20 %	5 - 7 %	--	--	--	15 - 20 %	--
Harvard Square Conv. Retail Sales (000's)	$6,601 $8,801	$5,717 $8,004	$3,080 $4,201	$15,398 $21,006	$15,398 $21,006	$1,257 $1,676	$16,655 $22,682
Productivity Factor	$150/SF	$150/SF	$150/SF	$150/SF	$150/SF	$150/SF	$150/SF
Supportable Convenience Retail Sq. Footage	44,010 58,670	38,110 53,360	20,530 28,010	102,650 140,040	102,650 140,040	8,380 11,173	111,030 151,200

1) Includes census tracts 3536, 3537, 3538, 3539, 3540, 3541.

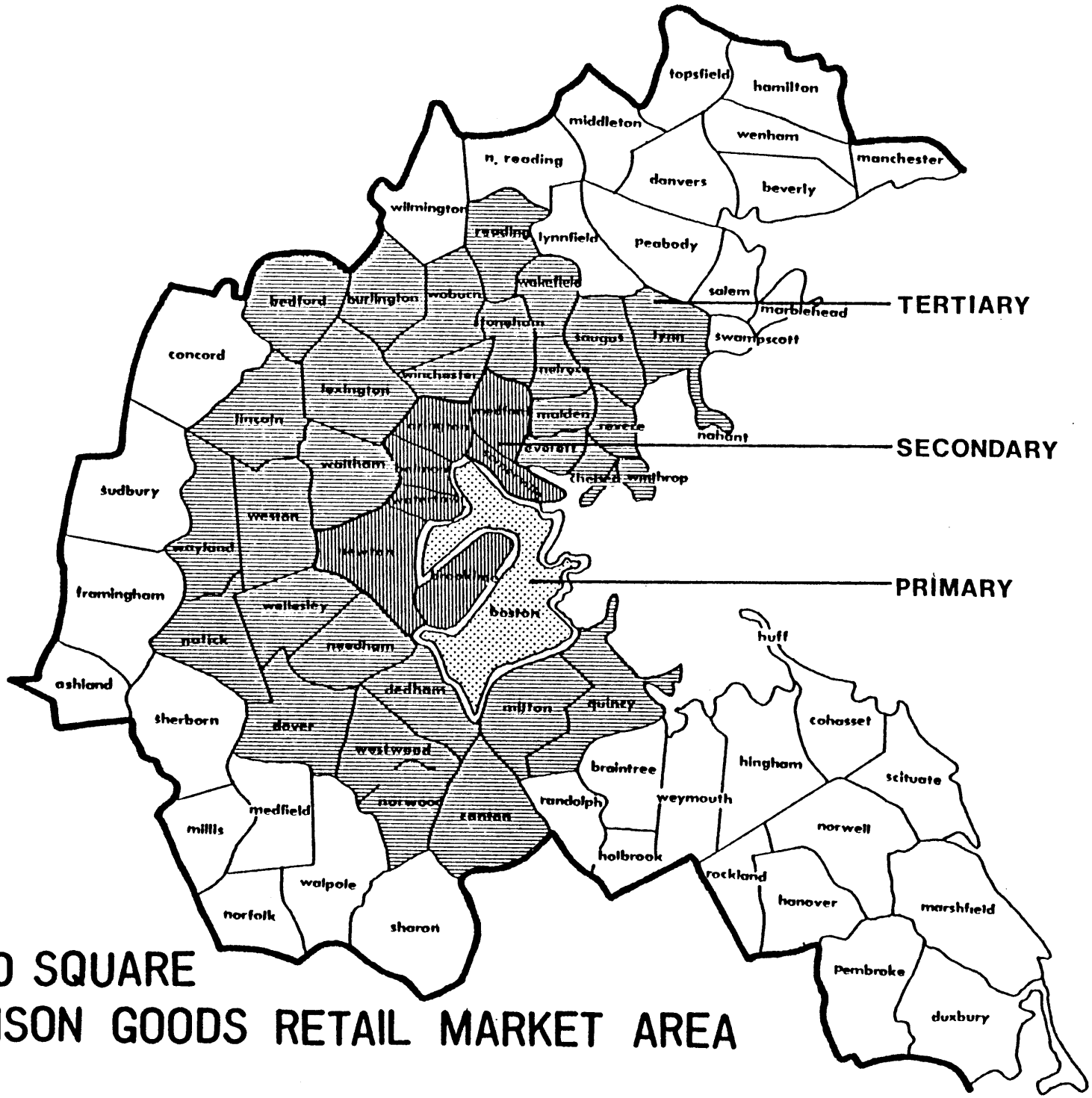
2) Includes the balance of Cambridge and census tracts 1 and 8 in Alston.

3) Estimated at 20 percent.

4) In constant 1974 dollars.

5) Includes expenditures for food, drug and eating and drinking.

Source: Gladstone Associates.



HARVARD SQUARE
COMPARISON GOODS RETAIL MARKET AREA

ESTIMATED SUPPORTABLE SHOPPERS GOODS RETAIL SPACE
HARVARD SQUARE AREA, 1985

	1985 (Present Equilibrium)				1985 (Expansion Scenerio)				
	Primary Market Area[1]	Secondary Market Area[2]	Inflow[3]	Total	Primary Market Area[1]	Secondary Market Area[2]	Tertiary Market Area	Inflow[6]	Total
Number of Households	253,100	147,300	--	--	253,100	147,300	313,000	--	--
Estimated Mean Income[4]	$18,000	$23,600	--	--	$18,000	$23,600	$23,500	--	--
Aggregate Income (000's)	$4,555,800	$3,476,280	--	--	$4,555,800	$3,476,280	$7,355,500	--	--
Percent Spent on Shoppers Goods[5]	15.5	15.5	--	--	15.5	15.5	15.5	--	--
Potential Shoppers Goods Sales (000's)	$706,149	$538,823	--	--	$706,149	$538,823	$1,140,102	--	--
Estimated Harvard Square Capture Rate	4 - 5%	2 - 3%	--	--	7%	4%	0.8%	--	--
Potential Harvard Square Sales (000's)	$28,246 $35,307	$10,776 $16,165	$6,886 $9,083	$45,908 $60,555	$49,430	$20,575	$8,750	$8,750[1]	$87,500
Productivity Factor	$250/SF	$250/SF	$250/SF	$250/SF	$250/SF	$250/SF	$250/SF	$250/SF	$250/SF
Supportable Shoppers Goods Retail Sq. Footage (S.F.)	112,985 141,230	43,105 64,660	27,545 36,330	183,635 242,220	197,700	82,300	35,000	35,000	350,000

1) Includes Cambridge and Boston.

2) Includes Brookline, Newton, Watertown, Belmont, Arlington, Somerville and Medford.

3) Estimated at 15 percent of total sales.

4) In constant 1974 dollars.

5) Includes expenditures in general merchandise, apparel, furniture, book and stationery stores.

6) Estimated at 10 percent of total sales.

Source: Gladstone Associates.

DISTRIBUTION OF SHOPPERS INTERVIEWED BY PLACE OF RESIDENCE
HARVARD SQUARE, AUGUST 1975

Place of Residence	Mid-Week		Saturday		Total	
Primary Market Area	Number	Percent	Number	Percent	Number	Percent
Harvard Square	14	16.7	10	12.8	24	14.8
Balance of Cambridge	16	19.0	16	20.5	32	19.7
Boston	12	14.3	15	19.2	27	16.7
Subtotal	42	50.0	41	52.5	83	51.2
Secondary Market Area						
Brookline	3	3.5	2	2.6	5	3.1
Newton	4	4.8	1	1.3	5	3.1
Watertown	4	4.8	4	5.1	8	4.9
Belmont	4	4.8	1	1.3	5	3.1
Arlington	2	2.3	1	1.3	3	1.9
Somerville	4	4.8	4	5.1	8	4.9
Medford	1	1.2	4	5.1	5	3.1
Subtotal	22	26.2	17	21.8	39	24.1
Balance of Metropolitan Area						
Everett	1	1.2	-0-	0.0	1	0.6
Lexington	2	2.3	-0-	0.0	2	1.2
Lincoln	1	1.2	-0-	0.0	1	0.6
Melrose	1	1.2	-0-	0.0	1	0.6
Weston	1	1.2	-0-	0.0	1	0.6
Quincy	1	1.2	-0-	0.0	1	0.6
Cohasset	-0-	0.0	1	1.3	1	0.6
Weymouth	-0-	0.0	2	2.6	2	1.2
Randolph	-0-	0.0	2	2.6	2	1.2
Subtotal	7	8.3	5	6.5	12	7.3
Outside Metropolitan Area	13	15.5	15	19.2	28	17.3
Total	84[1]	100.0	78[1]	100.0	162[1]	100.0

1) Does not include 5 respondents whose place of residence was not reported.

NOTE: Percentages may not add precisely due to rounding.

Source: Survey by Gladstone Associates.

ESTIMATE OF RETAIL SQUARE FOOTAGE
HARVARD SQUARE AREA
SUMMER 1975

Type of Retail Space	Retail Space	
	Amount (S.F.)	Percent
Shoppers Goods[1)]	230,000	52.9
Convenience Goods[2)]	130,000	29.9
Miscellaneous[3)]	75,000	17.2
Total	435,000	100.0

1) Includes general merchandise, apparel, furniture, book and stationery stores.
2) Includes food and drug and eating and drinking establishments.
3) Includes liquor, antique, sporting goods, jewelry, fuel and ice, florist, cigar, camera, gift and other miscellaneous stores.

Source: Gladstone Associates and Charles G. Hilgenhurst Associates survey.

SUMMARY OF RETAIL SALES TRENDS
BOSTON METROPOLITAN AREA
1963 - 1972

	1963	1967	1972	Average Annual Change 1963 - 1967 Amount	1963 - 1967 Percent	1967 - 1972 Amount	1967 - 1972 Percent
Harvard Square[1]							
Shoppers Goods[2]	$22,319	$35,662	$38,425	$3,336	14.9	$553	1.5
Convenience Goods[3]	11,542	14,049	12,373	627	5.4	-335	-2.4
Eating and Drinking	NA	NA	NA	NA	NA	NA	NA
City of Cambridge							
Shoppers Goods	$107,959	$141,892	$134,213	$8,483	7.9	-$1,535	-1.1
Convenience Goods	94,937	84,481	95,510	-1,364	-1.4	1,206	1.3
Eating and Drinking	39,800	36,732	47,137	-767	1.9	2,081	5.7
Harvard Square Market Area[4]							
Shoppers Goods	$912,963	$1,008,746	$879,194	$23,946	2.6	-$25,910	-2.6
Convenience Goods	801,732	785,742	771,060	-3,997	-0.5	-2,936	-0.4
Eating and Drinking	333,639	371,456	391,731	9,454	2.8	4,055	1.1
Boston Metropolitan Area							
Shoppers Goods	$1,611,738	$2,004,532	$2,248,451	$98,198	6.1	$48,783	2.4
Convenience Goods	1,740,067	1,780,931	2,009,981	10,216	0.6	45,810	2.6
Eating and Drinking	556,948	648,068	792,914	22,892	4.1	28,969	4.5

1) Major Retail Center Number 2.

2) Includes book and stationery stores in MRC only, and general merchandise, apparel and furniture.

3) Includes eating and drinking in MRC only.

4) Includes Cambridge, Boston, Brookline, Somerville, Watertown, Arlington, Belmont, Newton and Medford.

Source: U. S. Census of Retail Trade, Major Retail Centers; Office of Economic Development and Manpower; Gladstone Associates.

ESTIMATED OFFICE SPACE CONSTRUCTION BY YEAR
CITY OF CAMBRIDGE, 1961 - 1975

Year[1]	Amount of Office Space Constructed (Gross Area in S.F.)	Annual Change	
1961	36,000	1961 - 1965	130,000 S.F.
1962	38,600		
1963	351,500		
1964	212,900		
1965	12,500		
1966	206,200	1966 - 1970	148,520 S.F.
1967	50,400		
1968	132,500		
1969	125,000		
1970	228,500		
1971	91,500	1971 - 1975	84,340 S.F.
1972	94,600		
1973	27,200		
1974	89,400		
1975	119,000		
Total	1,815,800	1961 - 1975	121,053 S.F.

1) Building permit data has been presented on the basis of either actual or expected year of completion.

Source: City of Cambridge, Building Department, Building Permit Data; Gladstone Associates.

RECENT OFFICE SPACE ABSORPTION LEVELS
MAJOR OFFICE BUILDINGS
CITY OF CAMBRIDGE
1972 - 1975

	Occupied Office Space (S.F.)		Average Annual Change	
	1972	1975	Amount	Percent
Harvard Square				
Competitive	107,500	145,200	12,567	11.7
Non-Competitive	214,600	254,600	13,333	6.2
Total	322,100	399,800	25,900	8.0
Balance of the City				
Competitive	381,800	460,600	26,267	6.9
Non-Competitive	447,200	457,000	3,266	0.7
Total	829,000	917,600	29,533	3.6
City Total				
Competitive	489,300	605,800	38,833	7.9
Non-Competitive	661,800	711,600	16,600	2.5
Total	1,151,100	1,317,400	55,433	4.8

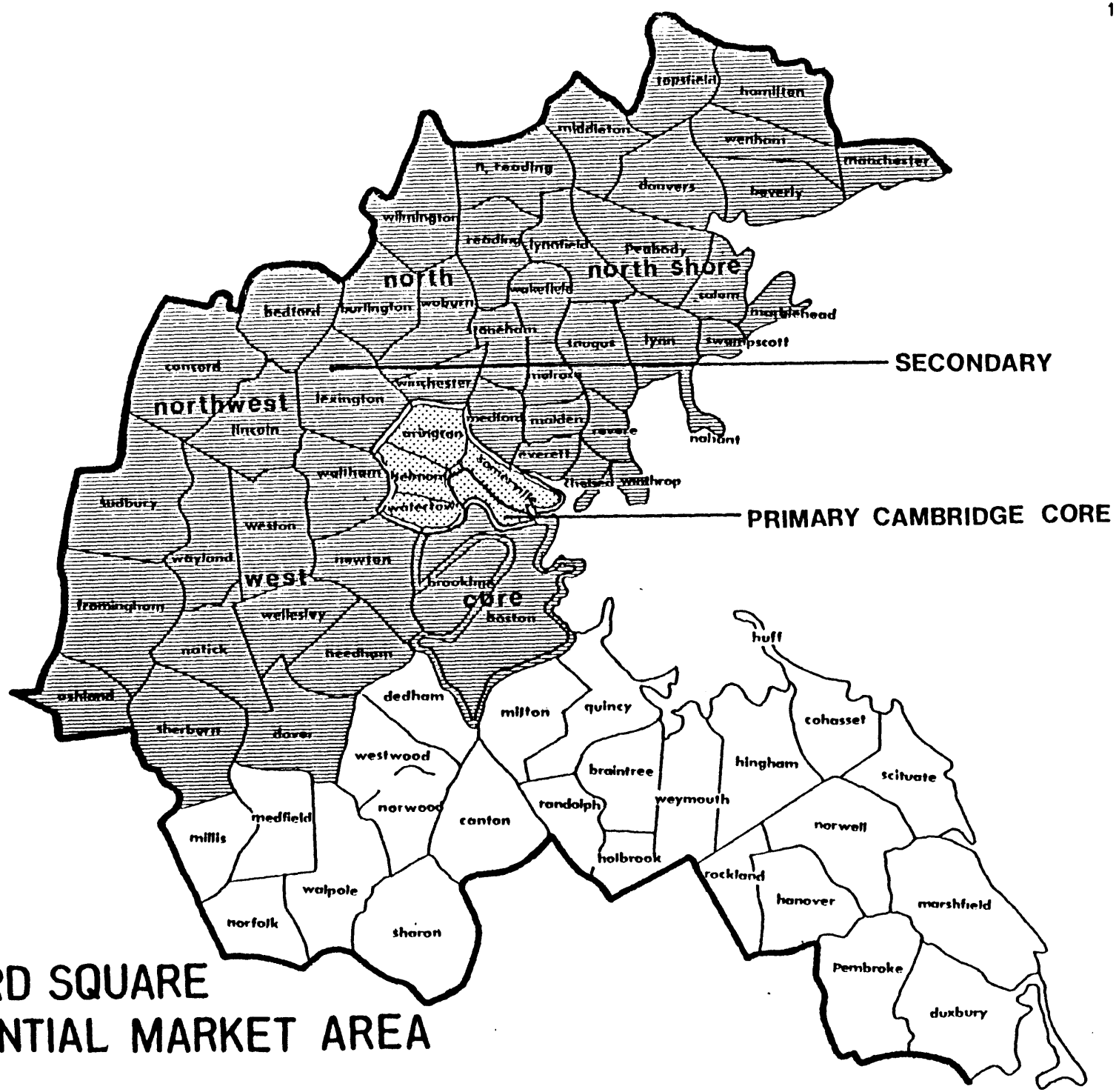
Source: Gladstone Associates.

OFFICE DEVELOPMENT POTENTIALS
HARVARD SQUARE AREA
1975 - 1985

	Annual Average		
	1975 - 1980	1980 - 1985	10 Year Total
Metropolitan Office Demand (S.F.)	1,740,000	1,650,000	16,950,000
Share Accruing to Inner Suburban Region[1]	10 - 15%	10 - 15%	10 - 15%
Inner Suburban Development Potentials (S.F.)	174,000 - 261,000	165,000 - 247,000	1,695,000 - 2,542,000
Percent Capture at Harvard Square	8 - 10	8 - 10	8 - 10
Harvard Square Development Potentials (S.F.)	13,900 - 26,100	13,200 - 24,750	135,600 - 254,250

1) Within a 5-mile radius of Kenmore Square excluding downtown Boston.

Source: Gladstone Associates.



HARVARD SQUARE RESIDENTIAL MARKET AREA

AGGREGATE HOUSING DEMAND
HARVARD SQUARE MARKET AREA
1975 - 1985

	Annual Average, 1975 - 1980				Annual Average, 1980 - 1985			
	Net Change In Households	Replacement[1]	Vacancy Adjustment[2]	Total	Net Change In Households	Replacement[1]	Adjustment[2]	Total
Primary Market Area[3]	160	540	10	710	540	540	20	1,100
Secondary Market Area[4]	2,150	2,540	70	4,760	3,000	2,540	100	5,640
Tertiary Market Area[5]	4,410	1,370	150	5,930	4,420	1,370	160	5,950
Metropolitan Total	6,720	4,450	230	11,400	7,960	4,450	280	12,690

1) Estimated conservatively at 0.5 percent of the 1970 year-round housing stock, thereby taking into account future losses to the housing stock due to demolitions, conversions and mergers.

2) To insure adequate flexibility and functioning of the housing market, an adjustment of 3.5 percent of household change is added; this reflects an average tolerance of 5 percent vacancy in the rental market and 2.5 percent in the sales market.

3) Includes the following cities and towns: Cambridge, Arlington, Belmont, Somerville and Watertown.

4) Includes the Boston-Brookline urban core and the north, northwest and western suburbs.

5) Includes the north shore, south shore and southwestern suburbs.

Source: Gladstone Associates.

HOUSING STOCK TRENDS

BOSTON METROPOLITAN AREA, 1960 - 1970

	Year Round Housing Units				Average Annual Change	
	1960		1970		1960 - 1970	
	Number	Percent	Number	Percent	Number	Percent
Harvard Square						
Owner Occupied	1,312	12.9	1,054	10.1	-26	-2.0
Renter Occupied	8,635	85.1	9,084	87.0	45	0.5
Vacant	202	2.0	298	2.9	10	4.8
Total	10,149	100.0	10,436	100.0	29	0.3
City of Cambridge						
Owner Occupied	7,708	21.9	6,990	18.6	-72	-0.9
Renter Occupied	26,545	75.3	29,421	78.1	288	1.1
Vacant	980	2.8	1,237	3.3	26	2.6
Total	35,233	100.0	37,648	100.0	242	0.7
Cambridge Core Area[1]						
Owner Occupied	39,435	39.5	39,123	36.4	-31	-0.1
Renter Occupied	57,943	58.0	65,889	61.2	795	1.4
Vacant	2,467	2.5	2,597	2.4	13	0.5
Total	99,845	100.0	107,609	100.0	777	0.8
Boston Metropolitan Area[2]						
Owner Occupied	402,745	50.3	542,003	50.7	4,929	1.2
Renter Occupied	367,723	45.9	407,668	45.8	3,994	1.1
Vacant	30,147	3.8	31,055	3.5	91	0.3
Total	800,615	100.0	890,756	100.0	9,014	1.1

1) Includes the following cities and towns: Cambridge, Arlington, Belmont, Somerville and Watertown.

2) Includes Millis and Sherborn which were added to the Boston SMSA in 1963.

Source: U. S. Census: Gladstone Associates.

HOTEL DEVELOPMENT POTENTIALS

HARVARD SQUARE AREA

1975 - 1985

Source of Demand	Number of Rooms
Present under-supply of rooms in Cambridge assuming 70% occupancy as breakeven point	50
Increase in visitor levels estimated at 4% of current demand annually	270
Total Hotel Demand	320
Share Accruing to Harvard Square Area	25 - 50%
Harvard Square Development Potentials	80 - 160 rooms

Source: Gladstone Associates.

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